The Essentials of
PSYCHOLOGY
for Student Teachers

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BY

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LONDON
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J. M. DENT & SONS LTD.
Aldine House · Bedford St. · London

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Made in Great Britain
by
Hazell, Watson & Viney, Ltd.,
London and Aylesbury

First Published . . 1936
Reprinted . 1945, 1948

Bureau Ednl. Psy. Research
DAVID HARE TRAINING COLLEGE
Dated 28.3.55
Accs No. 708

PREFACE

For some years past it has been part of my professional duty and pleasure to introduce annually to a group of Training College students the elements of psychology, with special reference to their future work as teachers. During their training several books have been used as prescribed texts, with more or less success but never with entire satisfaction. One of the drawbacks of these books, in my opinion, has been an aspect in which no doubt the authors took legitimate pride; namely, the endeavour to present impartially the views of the two main schools of psychology at the present time—the Mechanistic, as represented chiefly by the Behaviourists, and the Hormic. This endeavour aims at preserving, at least tacitly, the conception essential to the latter school that behaviour is truly purposive, and at the same time harmonizing with this the view that education is concerned primarily with the establishment in the individual of a large number of response-bonds, the bricks with which the mechanistic behaviourist school would build a human character.

It has been my belief and experience that more effective progress is made in the long run by adopting quite definitely the hormic conception, and presenting it with vigour, even at the risk of appearing biased or a propagandist. As will appear in the sequel, it is an essential pedagogic corollary to the hormic psychology that the presentation (especially the first presentation) of any matter should be made with sincere conviction, if the students are to be impressed by it as an aspect of the truth and as having significance for them in relation to their daily lives. This last phrase may suggest the danger of a purely utilitarian outlook, but I hope and believe that this has been avoided. One of the critics who read this book in manuscript was of opinion that the work is too academic as an introduction to the purely descriptive child-study. Another critic, however, has complained that it does not sufficiently embody and display the scientific method as applied to psychology. The fact is that I have sought to steer a middle course, to make it scientific in that it is an accurate presentation of a particular point of view, yet without attempting a nice appreciation of conflicting views. This last, it seems to me, is out of place in an introductory treatment of the subject, tending as it does to obscure what is sincerely conceived to be of real value to the practical teacher; there is assuredly no necessary antithesis between the useful and the scientific.

Equipped with a clear view of the field from this angle the student can, as it were, take his bearings and fix the cardinal points, so that later he can view the same field from the standpoint of the behaviourist without being entirely confused and dazed. Having obtained a good if tentative grip of the hormic conception of human behaviour and character, he is in a better position to make effective comparisons with that of the behaviourist, to assess the value of the latter, and to adopt it if he thinks fit. But for the beginner to attempt to see both sides of the matter at once has seemed to me to produce the kind of confusion which, we may imagine, would result from an abnormality of binocular vision in which each eye transmitted to consciousness a markedly different picture of the same field. It is true, of course, that for complete understanding different points of view are essential; but this can easily be attempted too soon.

The following pages are the result of lecture-notes collected over a number of years. It goes without saying that no claim is made to finality in the presentation of the subject-matter. In fact, it is only after many misgivings that I have ventured to commit myself to print, for as each year goes by I find my views slightly modified in one direction or another, and I trust that this fluidity will continue to the end. But the main essentials are stabilized, and an endeavour has been made to present only the essentials, leaving abundant scope for discussion—a *sine qua non* of a real grasp of any subject.

Readers will easily recognize my many and great obligations to other writers, and above all to Dr. William McDougall and Professor John Dewey. I wish to take this opportunity of acknowledging how beholden I have been, both as a student and a teacher, to the work of these two men. I am also very much indebted to Mr. C. M. Booysen, Inspector of Schools, Natal; also to Professor G. W. Ferguson, of the Natal University College, to Dr. J. C. Coetzee of the Potchefstroom University College, and to Dr. William Boyd of Glasgow for reading this book in manuscript and for many valued criticisms and suggestions.

1936. A. H. A.

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CHAPTER I

THE AIM OF EDUCATION

Where there is no vision, the people perish.

In Relation to the Individual

1. At a later stage in this book it will be emphasized as an important principle that before attempting to present the details of any new subject, an effort should be made to induce the intended recipients to *feel the need* of this subject, or at any rate to show, in a general way, how it may be made to subserve one or more of their already accepted purposes. Following this principle and addressing myself chiefly to intending or practising teachers, I put the questions : 'What is your conception of the process of education ?' and 'What is its end ?' By general consent the answer to the first of these questions would be framed somewhat as follows : The process of education is the continuous modification of behaviour in the light of experience, the modifications being guided, in man, largely by intelligence (see Chapter Ten). Since, then, this modification of behaviour must always remain one of your primary concerns you must of necessity have an abiding interest in the motives which actuate behaviour. It is the business of psychology to offer you a comprehensive view of the motives actuating human behaviour and by so doing to enable you to understand better, and therefore to control more readily, your own behaviour ; and, secondly, to enable you to understand better, and so to direct more effectively, the modifications of behaviour in children.

It is not, of course, suggested that the motives actuating behaviour are the exclusive interest of teachers. A clearer and fuller knowledge of them is probably the most urgent need in the world to-day, both for the purposes of individual happiness, and for the purposes of social and economic reconstruction. For example, a recent textbook on Economics[1] gives it as axiomatic that 'the wage-earner . . . if his wants could be satisfied without any effort on his part, would not go to work'; but this is far too facile a simplification of the motives of the wage-earner and is true only of that mythical creature, the 'economic man.' Not until economists take note of the greater complexity, including potential altruism, of human motives can we look for much real enlightenment from that quarter. On the other hand, the unspeakable horrors of war are only too ghastly a testimony to the depths of depravity to which human beings may sink in the misuse of the power placed in their hands by the progress of the physical sciences, in the absence of adequate understanding of human motives and refinement of them as a result of that understanding.

2. This naturally leads us on to the question of the ultimate aim of education; but here we meet uncertainty. In fact, in some quarters there is a tendency to despair of our ever reaching an agreed answer.[2] But inasmuch as no man can be a complete master of his craft unless he has a clear vision of the end to be achieved, it is imperative that we should seek an answer which shall be both widely acceptable and also worthy of, and therefore likely to elicit, our very highest endeavours.

It is particularly necessary for teachers to have a clear vision of the ultimate aim of their endeavours, for there is probably no group of workers in any field so liable to 'lose the wood in the trees.' Continuously immersed in a daily round requiring the closest attention to small, and often apparently unimportant, details; or pursuing immediate ends which are very apt to assume a wholly unwarranted importance; and frequently required to switch over from one topic to another at the behest of a bell—the teacher above all people requires a constant inward perception of the final purpose of it all, to serve as his sheet-anchor, or as a touchstone by which to judge the value of all lesser and immediate purposes and the methods of attaining them. For, to give lasting satisfaction, these must all be in harmony with a worthy ultimate aim.

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[1] Benham, *Economics* (1939), p. 4.

[2] T. Raymont, *Education* (1935), Chap. II.

At any conference of teachers at which the work of the training colleges comes under discussion it will generally be found that one speaker after another emphasizes the need of more and more actual teaching practice. But while no one is at all likely to question the importance of such practice, it may easily be overlooked that the first and essential function of a training college is to inculcate a body of principles and ideals, rendered meaningful, it is true, by concurrent practice, but into which that practice and all future practice should fit : principles and ideals which

> Are yet the fountain-light of all our day,
> Are yet the master-light of all our seeing.

3. It has already been suggested that there is great diversity of opinion in regard to the ultimate aim of education. Yet we must believe that a general and fundamental formula can be found, sufficiently broad to be harmonious with the teachings of most of the great educators down the ages, yet not so broad as to be left meaningless. The latter danger is, perhaps, well illustrated in the statement of the Presbyterian Catechism that the chief end of man is to 'glorify God and enjoy Him for ever.' If, however, we seek to particularize this and to find a *modus conficiendi* for this great formula, it may surely be laid down that in education our constant and final aim is the development of human character, such character being conceived in terms of citizenship. And that citizenship in turn implies (*a*) the will to serve the community and (*b*) the ability to serve the community. Of these two aspects of citizenship it will readily be admitted that the former is by far the more important and fundamental ; for while the will to serve, without ability, may spell futility, it has only too often and too painfully been demonstrated, both in the economic and the political affairs of man, that ability without the will to serve spells positive danger. Moreover, the will to serve itself constitutes an urge to the attainment of the necessary ability, but the converse of this proposition does not hold. Consequently, when we come to consider the details of the development of character-as-citizenship, it is to this aspect that we shall first turn our attention.

It need, perhaps, hardly be said that, in conceiving of character in these terms, there is no suggestion whatever of adopting the Lycurgan view of the 'good laws' fixed for all time, which it is the part of the good citizen merely to obey. On the contrary, it is assumed that the citizen, while always imbued with a basic respect for the laws and social sanctions of his community, will be clearly cognizant of the fact that 'the old order changes' and that it is therefore an essential part of his duty to be always questioning the laws and customs of his time, to be critical of them, and to be ready to advocate well-considered and well-informed modifications, even to press for these in defiance of conservative opinion.

4. Before proceeding, however, it will be well to review some of the evidence in support of the statement that the aim of education, as defined above, may claim the support of many of the foremost educators of all time.[1] In the greatest days of Greece, we find Plato, writing of the education of the 'Guardians,' i.e. of the aristocracy of worth in his ideal Republic, that 'they must do that which at every moment they think it best for the commonwealth that they should do'; and in reply to a query regarding the happiness of the Guardians he asks the rhetorical question: 'Whether we are instituting the Guardians with a view to engendering the greatest happiness in them, or whether, as far as happiness goes, we are to look to the entire community to see if it grows up there?' It is true that some of the measures enjoined upon the Guardians, e.g. abstinence from all property or family ties, may seem doubtful wisdom to us; but this need only serve to emphasize the fact that the administrative details through which an ideal finds expression may and should vary from age to age to meet the varying needs of the times, 'lest one good custom should corrupt the world.' The conception of citizenship has naturally varied, and with it the details of education, but, as always, we are concerned not with 'the letter that killeth' but with the 'spirit that giveth life.' Aristotle expressed the same spirit even more boldly and generally in the words: 'It is wrong

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[1] Cf. Dr. Cyril Norwood, *The English Tradition of Education* (1929), Chap. I.

for any citizen to think that he belongs to himself: all must be regarded as belonging to the state.' (Here again misconception is possible; and that there is very real danger due to such misconception has been proved only too abundantly by the tragic history of Germany under the Nazi regime. To this we shall return presently.)

The Romans, in accordance with the prevailing genius of their race, translated the idea into deeds rather than words. In witness of this one need only mention such names as Manlius Torquatus, Cincinnatus, and Regulus. It will be recalled that Regulus, a prisoner-of-war in the hands of the Carthaginians, was required by his captors to go back to Rome to arrange terms of peace; but that before setting out he was made to take an oath that if he failed in his mission he would return to Carthage to be put to death. Believing, however, that the safety of Rome depended on the prosecution of the war, Regulus, when he stood before the Roman senators, merely said 'Carthage must be destroyed'—and then he returned to Carthage, and death. The other names and the way in which their bearers exemplified the Roman ideal of citizenship, the student may look up for himself.

Turning to the early years of the Christian era, when monasticism held the field as the dominant educational institution, it will doubtless be pointed out that here at any rate a different ideal prevailed; that the monk's gaze was fixed upon another sphere, and that his ideal was the will to serve God and not necessarily the community. But while this is undoubtedly true, it is also true that the monasteries, at their best, performed prodigies of social service in almost every sphere of human activity, and one may be forgiven for suggesting that they found in the service of their fellow-men, the most effective, if not the only, method of serving God. Moreover, there flourished in any case throughout the so-called Dark Ages, alongside of monasticism, the education of chivalry, the very essence of which was social service, as exemplified, for instance, in the Arthurian legends and similar cycles of Romance.

Next we find that the idea which was implied in monasticism at its best became quite explicit in the great renascence educator, Vittorino da Feltre, for whom the aim of education was to 'send forth young men and women who should serve God in Church and State in whatever position they might be called upon to occupy.' Milton's well-known definition reiterates the same conception, without, however, any direct reference to the service of God. 'I call, therefore, a complete and generous education, that which fits a man to perform justly, skilfully, and magnanimously all the offices, both public and private, of peace and war.'

When we come to the beginning of the modern period in education we meet apparently with a striking and important exception—Rousseau. To him the 'state' and the 'citizen' were anathema. Yet as we peruse *Émile* we find in fact that it was the state and the citizen, as he knew them, which he despised and that, after all, his aim was to produce a new kind of citizen, one adjusted to co-operate in his conception of a truly democratic state, as set forth in *The Social Contract*. Here, then, is an exception which most emphatically 'proves the rule.'

It is a point not unworthy of note here that both Plato and Rousseau, when they set out to urge a reconstructed state of society, remoulded 'nearer to the heart's desire,' considered it necessary to devote so much attention to the modification of education which would be essential in order to make that remoulding possible.

5. Amongst contemporary writers, education for citizenship finds a very wide measure of support, and the idea has been very neatly restated by Durkheim: 'The man that education must realize in us is not the man as nature made him, but as society would have him to be.' Nevertheless, we find two of the very foremost of modern educators, Professor John Dewey and Sir T. Percy Nunn, laying a very salutary emphasis on the importance of keeping in view the fullest possible development of individual capacities. This is one of the dominant themes in *Education, its Data and First Principles*, and Dewey has said that our aim should be to 'use individual capacity in activities having social significance.' Have we here a really deep-seated antithesis? Must we choose between the development of

individual capacity and the development of the qualities of citizenship? If either is to be subordinated, which is it to be?[1]

It has seemed to me that an analogy is helpful in this connection. We know that the body is composed of some millions of cells and that each of these cells carries on within itself all the essential life-processes; it takes in food and oxygen, it grows, it excretes, and it reproduces its kind. But in addition to this, in the multicellular organism, each cell has its own peculiar contribution to make to the well-being and functioning of the organism as a whole. On the one hand, it is clear that this contribution to the general well-being of the organism cannot be made with full effectiveness if the essential life-processes of the cell itself are not being fully and satisfactorily maintained; but, on the other hand, it is equally well known that, if the individual cell, or any group of cells, carries on its own essential life-processes without performing its function for the whole organism, then disease results; this, for instance, we are told is the nature of cancerous growths. Now, reverting to our own sphere, no one can doubt that there is something seriously amiss in the body politic and the body economic; in a world abounding with commodities and the power and means to produce more *ad lib.*, we have millions of people in want, and millions denied what is perhaps the most fundamental of all rights, the right to use their own hands and brains to gain their own subsistence.

May it not be that as individuals and as groups we are too much given to working out our own essential life-processes without due and sufficient regard to our obligations as citizens to the social organism as a whole? Without doubt we must develop individual capacities to the full; but equally without doubt, so it seems to me, they can be so developed to the full, the highest attainment of individuality can be achieved, *only* by willing self-submission to the well-being of the community. Here we have one of the eternal paradoxes: it is only by the surrender of all purely individual purposes that the fullest realization of individuality can be gained; the One, realizing identity with, and participating in the fullness of life in, the Whole. 'Whosoever will lose his life for My sake, the same shall save it.' 'Whosoever seeth Me everywhere and everything in Me, of him will I never lose hold and he shall never lose hold of Me.'

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[1] For a powerful statement, from a slightly different angle, of the dangers of individualism, see Dr. Cyril Norwood, op. cit.

Mention of Froebel's attitude has been designedly left until the end, because, although belonging to the past, in one sense he belongs to the future since we have not yet adequately appreciated the fullness of his message. His aim in education was to foster that realization of the spiritual oneness of all mankind, to which reference has just been made, and to which social service is the most obvious of corollaries. He tells us that even as a child every human being is to be viewed and treated as a necessary, essential part of *humanity*. Note that he does not refer to the state: in the days of Aristotle, when, owing to the prevailing conditions each state was relatively a self-sufficing and independent group, it was but natural for that great teacher to say that 'all must be regarded as belonging to the state.' But since the development of science, especially in regard to communications and industry, has brought all parts of the world so close together in a very large measure of interdependence, it becomes increasingly clear that 'patriotism' is most assuredly 'not enough.'

It becomes clear that we must seek, as the ultimate aim of all our educational endeavours, day in and day out, the development of the steadfast and fully-adjusted citizen of Cosmopolis. But this must not be taken to imply a denial of all national or other lesser loyalties. Indeed there is only too general a tendency to wax sentimental about 'our brethren in lands afar' while grossly neglecting the sufferings about our own doorsteps! The first duty of the citizen is certainly to his own immediate community; but the citizen of Cosmopolis will never say, 'My country, right or wrong'; nor even, 'My country, regardless of the welfare of others.' In the tragic history of the period between the two wars, the spirit of 'Isolationism' in America, the spirit which induced a British Prime Minister to refer to the Czechs (when about to let them down) as a 'far-away people,' that same spirit found expression only in more blatant, more extreme, and more ruthless form in the Nazi demand for the utter subordination of every other interest to that of the German state. In the citizen of Cosmopolis, on the other hand, will be developed both the will and the ability to serve his own immediate community and nation; but at the same time, and through these, to serve the wider community of nations. The greatest glory of the Cosmopolis of the future will be its 'diversity in unity,' each nation being proud, not of its achievements against others, but of its unique contribution to the general welfare.

The Aim of Education in Relation to the Race

6. Up to this point we have considered the aim of education as it affects the individual in his relations with the community; it remains to consider the matter briefly from the standpoint of racial development. What, if anything, can education contribute to the progress of the evolution of mankind? It is an aspect even more disputed than the other, and one with which, it might not unreasonably be held, teachers need not concern themselves, at least until the biologists have reached more unanimity amongst themselves. But it seems desirable that teachers should at least know the main points that are being disputed and should be able to meet the arguments of the biological expert to some extent on his own ground.

7. Obviously the facts about which we require to inform ourselves are those bearing on the question of heredity. One of the first and most thorough workers in this field was Sir Francis Galton, who carried through an inquiry into the family antecedents of one thousand selected men of genius with a view to determining to what extent they owed their outstanding qualities to their immediate forbears. The result was the publication of a work, the very title of which, *Hereditary Genius*, indicates quite definitely the conclusions to which he was led by the investigations

made. In cases of this kind, however, it must always be very difficult to discriminate between the effects of heredity and the influences of nurture : and the same criticism applies to an investigation made in the opposite direction by Kellicott in America. In this case the field of inquiry was a group known as the Jukes family, comprising in all some twelve hundred descendants from the five daughters of a worthless fisherman. The record portrays a sorrowful picture of poverty, disease, and criminality ; only some twenty of the whole group learned a trade and, of these, ten learned it in prison. It seems difficult to believe that so great a majority of the whole family could have been brought down only by environmental factors ; so at any rate Kellicott felt, for he published the account as giving strong support to claims of heredity.

Considerably more weighty evidence was brought to light by Goddard in a similar inquiry into a group known as the Kallikaks. The superiority of the evidence in this case is due to the fact that we have a twofold line of descendants from a man of good family, viz. (*a*) four hundred and eighty descendants of his feeble-minded son (born of a feeble-minded girl) ; and (*b*) four hundred and ninety-six descendants from a subsequent marriage with a normal girl. In the first group no less than one hundred and forty-three showed the definite characteristic of feeble-mindedness (which it would be difficult to account for solely in terms of faulty nurture) ; while in the second group there were only three who were degenerate.

Again, evidence of much weight has been collected from the investigation of the lives of identical twins, especially when, as in some instances, the environmental factors have been markedly different in the two cases. The strong resemblances have lent much support to the proposition that heredity is the chief determinant of our physical make-up ; but less so of mental characteristics.

Finally, even this cursory survey of the evidence would be incomplete without some mention of the work of Mendel. By means of numerous and most painstaking experiments on plants he not only demonstrated the important part played by inheritance, but even reduced the probabilities of the transmission of certain well-marked characteristics to a definite numerical formula. Thus, for example, he showed that if a dwarf and a tall pea are cross-fertilized, the first generation will be all tall plants ; but if these are allowed the normal self-fertilization, one-quarter of the second generation will be dwarf plants and, if self-fertilized, will breed dwarfs in perpetuity ; another quarter will be similarly *pure* tall ; the remaining half will be tall plants, but with self-fertilization they will again produce one-quarter pure dwarf, one-quarter pure tall, and one-half mixed ; and so on indefinitely.

8. A subsidiary question, equally important to the educator, concerns the possibility of the transmission of acquired characteristics, for obviously, if such transmission were clearly demonstrable, the importance of education for racial improvement would be definitely established, however important heredity in other respects might be. In regard to this question Lamarck, believing that mutations, and therefore new species, were produced by the use and disuse of organs, taught that acquired characters were transmissible. Darwin, whose observations, in search of data to support his theory of natural selection, covered an enormously wide field, would doubtless have welcomed proof of this, but he could find no sufficient evidence for the transmission in question. Later, Weismann was able to show that the germ-cells in each individual (i.e. the cells which will give rise to the succeeding generation) are isolated before birth, and therefore presumably they are not subject to subsequent influences in the life of that individual, nor capable of transmitting the results of such influences. Since his day, however, very much has been learned of the far-reaching influence of the hormones, or secretions of the ductless glands ; these are carried by the blood-stream and therefore must affect even the isolated germ-cells. But the position is still far from clear, in regard to this question, the weight of opinion amongst the biologists veering from one side to the other as the weeks and months go by.

9. Nevertheless, because of the great importance clearly

attaching to heredity, and because the claims for the transmission of acquired characters are certainly not proven, some of the biologists have not hesitated to express very definite views in regard to the value of education: thus Doncaster declares that 'the hopes held out of improving the race by education are illusory': and Carveth Read goes further in maintaining that education 'does nothing to improve the breed; it does some harm by enabling many to live who would otherwise have been eliminated.' Even so great an authority as Sir Arthur Keith has given his support to the idea that the modern humane tendency to care for, and develop, the physically and mentally weak to the limit of their capacity—i.e. to educate them—constitutes a danger from the standpoint of racial progress.

10. On the other hand, even admitting for the sake of argument the importance of heredity and the non-transmission of acquired characters, it is still possible to make out a reasonable case for the value of education from the present point of view. In the first place, it is now held by leading biologists that 'men and other organisms do not inherit characteristics at all. What their parents leave them are certain packets of chemicals which under one set of conditions produce one set of characters and under other conditions produce other sets.'[1] To this, it is true, it could still be replied that any possible improvements due to favourable conditions, in the shape of a good education, would still be a purely *individual* matter, and so far as the race is concerned, just the same packets of chemicals would be transmitted.

But we may pursue the matter a stage further; since we inherit only potentialities ('packets of chemicals'), a wise education may play the part of developing the good potentialities and leaving dormant the bad. In so doing this education gives to the individual endowed with desirable potentialities (i.e. those producing socially valuable characteristics) an increased chance of survival and of finding a suitable mate: therefore, in this way, education may promote the transmission of desirable potentialities and the gradual

[1] Dr. H. S. Jennings, *The Biological Basis of Human Nature* (1930).

elimination of the undesirable. Consider, by way of illustration, two individuals: A, with desirable potentialities a, b, c, d and with undesirable potentialities y, z; and B, with desirable potentialities, a, b and undesirable w, x, y, z. A wise education should develop more of the potentialities of A, and should therefore give to him a greater chance of survival and of transmitting to the next generation his more valuable 'packets of chemicals.'

Moreover, when eugenics (i.e. selection in mating, as applied deliberately in the case of domesticated animals) are proposed as the most promising way of improving the human stock, it may reasonably be asked by what methods such a plan could be applied to men and women. Obviously, legislative or any form of coercive methods would be a grotesque impossibility; a little consideration will show that the only practicable *modus operandi* of eugenics is education.[1] That is, by a wise presentation of the facts, from generation to generation, more and more men and women may be induced (as some few are already) to view their parental possibilities from the standpoint of the community and of the race. And, of course, a wise education may, here and now, operate in favour of eugenics by inculcating a salutary fastidiousness in the selection of a mate from amongst those of a similar standard of tastes and refinement, i.e. education may foster intelligent human co-operation in evolution, thus accelerating the process.

Finally, it may not be out of place here to draw attention to the fact that our supposedly foolish sentimentality in caring for the physically and mentally weak has in several well-defined cases abundantly justified itself even when viewed from a purely selfish standpoint. Consider, for example, the work of Madame Montessori, of Binet, and of Freud. The endeavours of each of these three were directed in the first instance towards the amelioration of the condition of the mentally feeble or deranged; and, as we shall see later, their work threw a flood of new light on the education of the whole body of normal children throughout the world. As a result, education generally is already somewhat wiser than it was thirty years ago, and the improvement will be progressively increased. And being wiser as a result of those efforts, education should steadily tend to operate more effectively for the improvement of the race along the lines noted above. We 'stoop to conquer.'

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[1] Cf. *Constructive Eugenics and Rational Marriage* by Morris Siegel (McClelland & Stewart Ltd., 1934).

Suggested topic for class discussion or debate.—The development of the child's personality should take precedence of the development of the citizen.

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CHAPTER II

LIBERAL OR VOCATIONAL?

Whose service is perfect freedom.

Before turning to the more definitely psychological aspects of education, we may complete this preliminary survey of the aims of our endeavours by a brief consideration of the age-long controversy as to whether education should be liberal or vocational in outlook.

1. The antithesis between these two aspects was very marked indeed at the dawn of our era in Greece. Amongst the Greeks, however, this was a perfectly natural and consistent attitude, for their state was quite frankly divided into two parts, composed of freemen and slaves respectively; and the former, while not despising work as such, quite openly despised the condition of those having to work for a living. Naturally, therefore, the education of the freemen was of a type designed to prepare them for the only occupation deemed worthy of their status, the right use of leisure. It is significant that the Greek word for a school originally meant leisure. This education consisted of the study of gymnastics and music, of rhetoric and mathematics, always pursued, however, as an end in themselves; the moment they were engaged in with a view to securing any pecuniary advantage, they ceased *ipso facto* to be liberalizing, though it has been very justly pointed out that the study of these 'liberal' pursuits carried the advantage of social prestige which, if not pecuniary, was at least quite definitely an *extrinsic* advantage. Doubtless the idea underlying this conception was that 'the Truth shall make you free'; at any rate, it set a premium on the pursuit of knowledge for its own sake which persists to the present day in many a study and science laboratory. Unfortunately it is not always realized to-day, any more than it was by the Greeks, that freedom is essentially a state of mind and that those who grasp most anxiously at its outward and

visible signs have at any rate lost sight of one important aspect of the Truth without which they can never be wholly free.

2. The typical modern state on the other hand is professedly democratic, composed entirely of freemen. Yet, as already mentioned, we have seen in recent years, and (unless fundamental changes in our social and economic structure are speedily brought about) we are likely to see again in the post-war years, millions of our free citizens denied even the right to work for subsistence. When we recollect that a slave in ancient days could at least look to his master *as of right* for shelter and food, it becomes manifest that our 'freemen' indeed

> wear the name
> Of freedom, graven upon a heavier chain.

In these circumstances, shall the state offer, as the official form of education, one that is liberal in the traditional sense or one that is vocational?

Clearly, when we consider the mechanical tendency of modern industry under mass production, when we think of young women spending seven or eight hours of each day wrapping up soap, or of men feeding tin plates into a machine, or even of a stenographer or a shop assistant, the idea of a vocational education, aimed at preparing children for such occupations, becomes entirely preposterous and fantastic. One is rather inclined to agree with George Sampson that our business is surely to educate children not *for* their vocation, but *against* it. The worst feature of modern economic life is not the prevalence of poverty, nor even perhaps the unemployment, which at least is fluctuating and, we hope, transitory, but rather that so few men or women find in their occupations any real satisfaction, any measure of self-realization, any outlet for their personality; that so few have experienced that new beatitude: 'Blessed is the man who has found his *work*; let him ask no other blessing.' Consequently the majority oscillate between work which is drudgery and leisure hours spent for the most part in empty folly. Clearly, to educate a child for this alternation of drudgery and folly would simply be to 'provoke the inevitable yoke.'

3. What then of the traditional liberal education oı to-day, one which connotes a passage through a preparatory school, a high school, and the university, with a curriculum based mainly on the classics and mathematics, and with wealth as the necessary passport? Will such a course give us any assurance of that social efficiency, that will to serve the community, which is our ultimate aim? It seems hardly likely, for such a course assumes, intensifies, and perpetuates class distinctions; and it cannot therefore inculcate that 'intelligent sympathy and goodwill' towards all members of the community, without which a genuine will to serve is impossible. Secondly, because of the linguistic difficulties involved, the pursuit of the classics becomes for the majority a new formalism of the most circumscribing and narrowing type, comparable to the worship of the word and phrase of Cicero which characterized much of the education of the later renascence period. Clearly such an education is liberal only in name and cannot fit a man for worthy participation in the varied aspects of citizenship in a truly democratic state. Will he not rather tend to feel that his ability to turn a Latin phrase gives him some kind of pre-eminence over the humble labourer, notwithstanding that the latter is making a genuine contribution to the communal welfare?

4. Obviously, therefore, some form of compromise or reconciliation must be sought between these two traditional extremes of education. Along what lines shall it be sought?

(*a*) In the first place it would seem necessary to break down in a large measure the rigid distinction which is commonly drawn between the activity by which a man happens to earn his salary or wages, and the numerous other activities which he undertakes purposefully as part of the normal life of an active citizen. Thus, for instance, a man may earn his salary as a teacher, and at the same time he may be a husband and a father, a member of a particular church and of two or three humanitarian or cultural societies, a keen gardener, or a wireless enthusiast, and he will probably give some thought to current problems in the municipal, as well as wider political and economic, spheres. All these activities cannot be kept separate from his work as a teacher ; for better or for worse they are bound to affect that work and to be affected by it. Moreover, in a very real sense, not only his teaching but all these activities constitute his contribution towards the general life of his community ; they may therefore be regarded collectively as his vocation ; they certainly constitute the full measure of his citizenship. Hence a vocational education in this wider sense becomes education for citizenship.

(*b*) A second and more fundamental modification of the present situation concerns the general control of industry. We have already noted, in speaking of Plato and Rousseau, the dependence of social reconstruction on educational reforms : this relationship is reciprocal. Recent publications by men of high standing in the spheres of political economy and political science[1] make it increasingly clear that some form of *social control* of industry and of distribution is imperative if the economic chaos, into which the world has drifted, is to be cleared. With the details of any plan by which such social control can be effected we are not here concerned, but if the repercussions in the sphere of education are to be satisfactory, the reorganization must be such as to induce a complete change of attitude in the workers. Instead of being regarded as mere 'hands' and 'working costs,' they must be able to feel 'this is *our* industry'; only so will it be possible for the many who are called upon to perform essential, but monotonous, services (and these constitute the vast majority) to feel any satisfaction in making their contribution to the commonweal. The great majority of us must of necessity remain cogs in the great machine, but we need not continue to labour under a sense of frustration as 'mere cogs,' but may become 'conscious and rejoicing cogs'—a vastly different thing. Though progress in this direction is painfully slow we may note the following among the modifications in the industrial sphere which have already assisted slightly in this direction: (*a*) the plan of making available certain shares, in an industry, to the operatives and encouraging them to invest their savings in this way; (*b*) the establishment of some form of joint council (e.g. the 'Whitley Councils'), through which the workers have some voice in the general control of the policy of the industry; (*c*) the great development of the Co-operative Movement and of the Public Utility Corporation; and (*d*) the increasing tendency of governments to appoint Control Boards over various industries—Boards which, though they often savour now of bureaucracy, are capable of development into effective instruments of democracy. In industry, as elsewhere, even good government is no satisfactory substitute for self-government. The latter alone gives promise of free and unfettered allegiance to, and co-operation in, the policy determined upon after consultation; and, what is even more important, it gives to all concerned a sense of being *significant* members, and therefore promotes in each the development of a sense of duty to contribute a *well-informed* opinion to the deliberations, and of a sense of responsibility for the well-being of the industry.

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[1] e.g. Herbert S. Jevons, *Economic Equality in the Co-operative Commonwealth* (1933); H. J. Laski, *Liberty in the Modern State* (1930); Lord Melchett, *Why the Crisis?* (1931); J. A. Hobson, *Rationalization and Unemployment* (1930); G. D. H. Cole, *An Intelligent Man's Guide through World Chaos* (1932); F. Henderson, *The Economic Consequences of Power Production* (1931); and also the writings of Professor J. M. Keynes and Sir Norman Angell.

5. How would such changes be reflected in the sphere of education? They would make possible a form of education which should be both vocational and liberal. They mean that any study or activity undertaken to make one a more efficient 'conscious and rejoicing cog' is, besides being obviously vocational, also wholly and truly liberalizing. For the very essence of liberty is not a negative quantity, the mere absence of *external* control, but positive *self*-control in obedience to the eternal laws of one's being. Someone has recently described freedom as the 'recognition of necessity'—a rather startling epigram, perhaps; but if one pursues the thought by inquiring 'What is this necessity?' it leads one back to the definition of freedom as the willing observance of, and co-operation with, the eternal

laws—the only ultimate necessities. This conception of freedom was clearly envisaged by Coleridge in his lines apostrophizing the emblems of liberty :

> Ye clouds, that far above me float and pause,
> Whose pathless march no mortal may control ;
> Ye ocean waves, that wheresoe'er ye roll,
> *Yield homage only to eternal laws.*

How then shall man attain freedom ? What is for him the eternal law ? In Christian terminology, 'the law and the prophets' are summed up in the injunction to 'love God with all his heart, and his neighbour as himself.' He, therefore, who is consciously fitting himself to give of his best to the communal well-being, be his form of service never so humble, is living in harmony with the law and is free.

> I, who wept with all my brother's tears,
> Now laugh and am glad, for there is Liberty !

There is liberty for all in whom this changed attitude towards their work and their social obligations has become a reality ; but whilst of course such a change is not impossible under present conditions, it would become infinitely easier of attainment by all if the social and economic structure of society were such that every person's endeavours were patently serving directly the *general* weal, instead of being canalized, as so often appears to be the case, for the special benefit of an individual, whether the worker himself or another. A sympathetic observer of the trend of affairs in the Soviet Union (Maurice Dobb, in *Russia To-day*) suggests that this new spirit, both in industry and in education, is beginning to appear in that country. More recently Mrs. Beatrice King in *Changing Man* has added the testimony of one who has the advantages of a thorough knowledge of the language and long residence in Russia ; and still more recently has appeared a small book intended for school children, *Life in the U.S.S.R.* (Nelson & Sons, in the Practical Work Book series, 1943), showing even more clearly the trend of modern thought. Judged by our standards the education of Russia would seem most severely vocational in the narrow sense, yet in so far as the arts and skills are being pursued deliberately with a view to increasing the 'comrade's' social usefulness the result must be real freedom of spirit. An interesting and very recent development in England has been the institution of further education for apprentices *within* certain large industrial concerns such as: Sigmund Pumps, Ltd., and the De Havilland Co. These educational endeavours have the obvious advantage over ordinary technical courses offered by outside agencies that they are directly and closely related to the realities of the apprentice's life. To that extent, they run the risk of being strictly vocational in the narrow sense; but there is 'evidence of clear recognition on the part of industry that the aim of any education and training of young people must be, not only to produce good workmen, but well-informed and responsible citizens' (*Times Educational Supplement*, 8 May 1943). In so far as this aim is realized, such educational projects by industrial concerns will become truly liberal as well as vocational.

What precisely is implied for the details of school procedure by such a change in outlook? It means, of course, that the vocationalists must have their way in so far as they insist that the school curriculum must be clearly and closely related to the current life of the community. It means more activities, more workshops and laboratories, more literature and music, more plays and discussions; such changes as, for instance, those introduced by the late Mr. Sanderson at Oundle or as those reflected in Mr. Caldwell Cook's *The Play Way*. All such activities are calculated to enlist to the full the active co-operation of the pupils; to give to each the opportunity to exercise his own initiative, to secure 'self-activity' in the best sense of the term; and the objection sometimes raised, that we should be in danger of educating boys and girls above their station, has been most delightfully answered by George Sampson: 'You cannot educate boys and girls above their station; you are educating men and women, and in this world there is no higher station.' But to be fully effective such activities would need to be pursued with unremitting thoroughness; in such a way, that is, as to make clear, so far as is humanly possible, the scientific basis of all the processes involved,

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and also their social significance and value. These chapters may perhaps be used by way of illustration of what is intended ; they will seek on the one hand to make clear the scientific basis of the technique of teaching, and on the other the social significance of the process ; hence they endeavour to be truly liberal-vocational.

If this spirit can indeed be captured, then textbooks and formal lessons will fall naturally into their place as valued allies, instead of being wearily suffered. But, above all, a reconciliation will be achieved between the liberal and vocational points of view ; the pleas of those who urge that education must prepare each man to pull his own weight in the world will be fully met ; but met in such a way as to open, and not close, the gateway to an ever fuller participation in those pursuits which are adapted to promote amongst mankind a worthy enjoyment of leisure. Thus we shall return to the ideal of the Greeks ; but with an important difference. For we shall combine in each person both the vocational and the liberal attitude ; and each will be enriched by the close association with the other.

Suggested topic for class discussion or debate.—Freedom is unattainable in the modern state ; or Freedom is merely an academic myth.

Books which might be consulted :

J. Dewey, *Democracy and Education.* 1916.
H. J. Laski, *Liberty in the Modern State.* 1930.
W. Lippmann, *A Preface to Morals.* 1929.
F. Clarke, *Essays in the Politics of Education.* 1923.
Cyril Norwood, *The English Tradition of Education.* 1929.
P. Monroe, *History of Education.* 1929.
L. P. Jacks, *The Education of the Whole Man.* 1931.
G. Sampson, *English for the English.* 1921.
L. Hogben, *Dangerous Thoughts.* 1939.
Lord Eustace Percy, *Education at the Crossroads.*
O. A. Wheeler, *Creative Education and the Future.* 1936.
Sir R. Livingstone, *Education for a World Adrift.* 1943.
F. J. Wright, *The Elements of Sociology.* 1942.

CHAPTER III

THE GENERAL NATURE OF INSTINCTIVE BEHAVIOUR

One touch of Nature makes the whole world kin.

Having now surveyed our field, decided upon our ultimate objective, and taken cognizance of some of the more important of the other influences operating in the same field, we may turn to the first of the definitely psychological problems which confront us. Recollect that we are out first of all to gain a comprehensive view of the motive forces of human behaviour ; thereafter we shall trace the manner in which these forces are organized in the developed human personality, paying special attention to the beginning of that organization as seen in children, and leading eventually in the course of the next six chapters to a psychological account of character and will.

1. So long as psychology depended chiefly on introspection as its method, it remained very largely in the descriptive stage ; hence, although it produced much that was very interesting, it was not in a position to disclose the essential causal connections underlying behaviour and therefore was not able to offer much real assistance to the teacher. With the realization of the general facts of evolution, psychologists naturally turned to the study of animal behaviour, as probably exhibiting in simpler form the essential features of all behaviour, so that, with the clues so gained, they might be in a better position to unravel the complexity of human behaviour. Following in their footsteps, we shall now gather together the main principles regarding behaviour which have been brought to light.

Most people, if asked to apply a general descriptive term to animal behaviour, would probably think of the word 'instinctive,' but if asked to give any precise connotation to this term, they would generally be in difficulties at once.

Let us therefore examine some well-known and typical examples of instinctive behaviour in animals in order to come to some understanding regarding the connotation of the term.

(*a*) *The Yucca Moth.* This creature, when about to lay its eggs, selects a flower of the yucca aloe which is ready for pollination and deposits the eggs within the undeveloped ovary. It then gathers pollen from adjacent flowers in which the anthers are ripe and proceeds to place this upon the stigma of the flower first selected. In this way it ensures the development of that ovary and thus secures an adequate food supply for the larvae when hatched. Note that the moth does not live to see the results of its labours and, moreover, as each generation of moths passes away before the next appears, there can be no question of imitation.

(*b*) *The Solitary Wasp.* In similar circumstances, i.e. when about to rear her family, the solitary wasp burrows a hole in the ground and then begins to gather provender for the larvae when hatched. Having secured the first victim, usually a spider or a worm, she deposits it at the bottom of the hole and lays an egg on the softest part. Thereafter she sallies forth in search of further supplies, and as each victim is brought to the mouth of the hole she goes through a strange ritual ; she lays the worm within half an inch of the opening, goes down into the hole head first, reappears in a moment, again head first, and draws the worm down into the hole, moving backwards. When a sufficient supply is thus stored away, she covers over the hole, smoothing down the ground so that no visible traces of the operations are left. So far the behaviour follows the inherited pattern, i.e. it is purely instinctive. But Fabre describes how on one occasion he took his stand near a hole, and when the wasp, having deposited a cricket, disappeared in the hole, he quickly removed the cricket a foot or so. The wasp reappeared, recovered its prey, and the process was repeated over and over again until at length the wasp abandoned that particular cricket and went off in search of another. Another pair of observers, George and Elizabeth Peckham, having read the account of this experiment, repeated it. In this case, however, after only four frustrated attempts the wasp in question eventually carried its prey (a grasshopper in this case) directly down into the hole : the ritual performance was omitted ![1] The same observers also record that on one occasion they noted a solitary wasp using a small pebble to beat down the ground after the hole had been covered in.[2]

(*c*) *Spider and Moth.* The following incident was recently observed by the writer. A large spider had stretched its web across a corner in which an electric light was placed and was therefore very favourably situated for capturing night-flying moths. One evening a very large moth (measuring at least five inches across the wings) fluttered into the web ; at the first contact the spider rapidly advanced from its retreat at the top of the web, but received such a battering from the violently fluttering wings of the moth that it at once retired to its retreat. Up to this point again the behaviour is purely instinctive. Unfortunately it was not possible to say whether this was the *first* occasion on which the spider had encountered so large a moth ; however, it remained perfectly still in the retreat for at least two minutes while the moth was intermittently struggling to free itself ; i.e. the spider did not respond to the customary stimulus to a rapid advance upon its prey. At length the moth was exhausted and hung motionless in the web ; and when it had remained thus for about twenty seconds the spider began to advance once more, but, this time, *cautiously* and *upon the temporary cessation of the customary stimulus.* When within four inches of the moth, it deliberately gave the web three violent shakes at intervals of three or four seconds (waiting in between to observe the effect on the moth, presumably). As there was no response the spider finally seized the moth, but this new stimulus aroused the latter to further wing-flapping, forcing the spider to retreat once more. The moth's renewed efforts secured its release, but within a minute or two it was again endeavouring to fly to the light and was saved only by the frayed condition of its wings.

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[1] *Wasps, Solitary and Social* (1905), p. 305. I have myself repeated this experiment with precisely the same result as in the Peckhams' case.

[2] Ibid. p. 39.

(*d*) *Pike.* The following experiment was performed by Möbius in 1873. A pike was placed in a tank having a glass partition down the middle, and a minnow was then put in on the other side of the partition. The pike made repeated darts at the minnow, on each occasion beating itself against the partition. This is simple instinctive behaviour. Eventually, however, it desisted from any attempt to take the minnow; thereupon the glass partition was removed, but the pike still made no attempt to interfere with the minnow.

(*e*) *Birds.* Every one is familiar with the way in which a hen will, under ordinary circumstances, take to headlong flight at the approach of a dog; whereas, if she has chicks, she will face the dog, ruffle up her feathers, make threatening noises, show, in fact, every sign of battle, and if the dog approaches too near she will actually fly at him. Indeed she will, in similar circumstances, even attack a motor car! Lloyd Morgan describes how he reared in an incubator a moorhen chick which he brought up by hand. He was anxious to observe when, and under what circumstances, it would first display the dive characteristic of the species, and on several occasions when it was swimming he tried to frighten it, without result. Then, when it was five weeks old, he had taken it down to a neighbouring stream, and as it was swimming about in a pond, a dog suddenly came rushing vociferously down towards it. Hey presto! the characteristic dive was at once accomplished: a piece of purely instinctive behaviour.

(*f*) *Dogs.* The actions of the dogs in the examples cited above are the characteristic instinctive behaviour of the species in the circumstances noted. We are all familiar, too, with the response of a dog if he suddenly hears the sounds of a dog-fight in his vicinity, or if he sees a strange dog on the other side of the street.

(*g*) *Apes.* Köhler's book on *The Mentality of Apes* contains abundant examples of the responses of these creatures under carefully arranged and closely observed conditions. One example, selected almost at random, must suffice. A banana was placed outside the ape's enclosure a little beyond ordinary reach, but a stick was left lying on the ground within the enclosure. With very little delay the stick was used as a means of drawing the banana within reach. Then, as an extension of this experiment, the banana was, on another occasion, placed beyond the reach of the one stick, but another stick was also provided, into which the first could be socketed. This situation seemed at first beyond the capacity of the ape ; he tried first one stick, then the other, then held both in his hands, but appeared incapable of solving the problem. Eventually the observer, concluding that the experiment had failed, left ; but presently he was hurriedly recalled by an attendant who reported that the ape, while playing carelessly with the two sticks, with his back half turned to the banana, had accidentally brought them into alignment, and thereupon socketed them and made straight for the banana.[1]

Another observer, who had made a great pet of an ape and had taught it to behave in a surprisingly human manner, gives the following incident. On one occasion she was dressed to go out when the ape approached and was about to jump (as was his custom) on to her lap. She would not allow him to do so, however, whereupon the ape brought a newspaper, which he spread on her lap, and then jumped up. It will be observed that in both the above examples there is little purely instinctive behaviour.

(*h*) I shall conclude with one example of purely instinctive behaviour in a child. One evening I was romping with my three daughters, aged eleven, nine, and six respectively. After a while I escaped from them temporarily and hid under the bed in an adjacent room. After a search, they came, all three together, to the room in which I was, and the eldest switched on the light saying quite confidently : ' I know, he is under the bed.' Then all three bent down to look, and as they did so I let out a roar. The elder two ran away laughing, but the youngest fled in genuine fear, crying vociferously. It may be objected that at the age of six years a child would be too advanced to respond in a purely instinctive manner. In this instance, however, there was no doubt of it; and even adults sometimes, when taken suddenly unawares, respond in a primitive instinctive fashion.[1]

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[1] Köhler , *The Mentality of Apes* (1925), p. 132.

2. Bearing in mind this series of examples which, it will be observed, has been arranged in an ascending scale of life, let us now try to analyse out the essential features common to all cases of instinctive behaviour, both in its simple form and when modified in the light of experience.

(i) A purely instinctive response is independent of prior experience or of imitation. This is clearly brought out in the above cases of insects and of the moorhen, and if the reader will observe other animals with sufficient care, it will be found to apply generally. But, although innate, the response is not necessarily perfect at its first occurrence, though in general it is sufficiently well performed to be effective.

(ii) The last word suggests another general characteristic, viz. that every instinctive response is purposive. Again, this does not mean that the creature concerned is aware of the end-state to which the activity is directed; in the case of the insects we may say with practical certainty that there is no such awareness, and even in the case of the higher animals there is probably only a very dim consciousness of the purpose to be achieved. The word *horme* is applied to this unconscious purpose which characterizes instinctive behaviour at the lower end of the animal scale. To conscious purpose is applied the term *conation*; and in either case horme or conation connotes an urge to a characteristic mode of activity, which is common to all members of a species, when that instinct is called into operation. Thus in the instances of the hen (without chicks), the moorhen, and the child, the same instinct was operative, and in each the activity was a characteristic form of flight. This activity phase may be referred to as the *executive aspect* of the instinct.

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[1] See for example McDougall's *Outline of Abnormal Psychology* (1926; 2nd ed. 1933), p. 301, case 29.

The various forms which this executive aspect takes will be shown when each of the instincts is discussed later.

(iii) This characteristic train of activity is 'set off' in each case by the perception of a particular type of situation: in the yucca moth by the perception of a certain type of flower at a particular stage of development; in the spider by the perception (tactile) of the vibration of its web; in the pike by the perception of a minnow within striking distance; in the moorhen by the perception of the loud barking of a dog; and in the child by the sudden perception of a loud roaring noise. In each case this perceptive phase is known as the *cognitive aspect* of the instinct.

(iv) The fourth characteristic feature of instinct is not so readily discernible, because, whereas all the others may be objectively observed, this aspect is purely subjective. That being the case, its existence can be actually experienced only by introspection; if the reader will recall any recent occasion on which he has acted in a purely instinctive manner (as in the case of the child in example (*h*) above), he will be able to recollect a very definite state of feeling accompanying the whole instinctive process. Again, reverting to the example of the hen, we may find some evidence of this internal factor; in one instance she flees from a dog, while in another she shows fight on a perception of the same kind.[1] This unmistakable difference in the responses to a similar situation may be associated with a definite difference in the inner factor, the feeling aroused. This is known as the emotional or affective aspect, and its characteristic form in the case of each instinct will also be discussed later: for the present, suffice it to say that we see in the hen two forms—fear and anger.

(v) It will be observed that in each case of instinctive behaviour there are three clearly discernible aspects; viz. the *cognitive*, a perception which calls the instinct into operation, or sets it off; the *executive*, the activity or train of activities by which it finds expression ; and the *affective*, the emotional aspect. We have now to draw attention to another and exceedingly important general characteristic of instinct, viz. the fact that the cognitive and executive aspects are *modifiable* ; [1] and that this modifiability becomes more and more pronounced as we advance up the scale of animal life. Thus in the insects we saw that relatively the instinctive response is exceedingly rigid and specific ; in the solitary wasp observed by Fabre the ritual act was repeated again and again, and the whole instinctive process was held up for the want of a very slight modification. Or to put the matter in another way, we might say that the wasp is exceedingly slow to profit by experience (and the moth is notoriously so). Nevertheless the Peckhams did bring to light the possibility of modification even at this very low level ; and moreover they also showed that it applies to the cognitive as well as to the executive aspect of the instinct ; for although each species of solitary wasp has its own preferred form of prey, say, a worm or a spider, yet in the absence of that form, the perception of some other form of prey of a suitable type is sufficient to 'set off' the instinct. In the pike again, modifiability of the cognitive aspect was found in a very low degree ; there were many futile attempts before it ceased from darting at the minnow. Birds, again, usually have a preferred material of which to build their nests, but in its absence they will make use of the nearest available substitute. Again, a hen in flight will not merely run, though this is the characteristic action ; under stress she will also attempt to fly or take refuge in a dense thicket or leap into a tree. Here we have the appearance of much more pronounced modifiability. And we have an even greater degree in the dog; if the hen gets up a tree, he ceases running, and begins barking, whining, jumping, and clawing at the tree-trunk. In the apes we find a degree of modifiability so high that without hesitation we should apply the term 'intelligent' to their behaviour. And finally, in man, the possible modifications are so endless that until comparatively recently it was not recognized that man had any instincts at all.

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[1] It is true of course that the situation is not identical, for in the second case she also perceived her chicks. To the behaviourist this would be a sufficient explanation of the different response. This point will be referred to again, in Chapter Five.

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[1] The emotional aspect is modifiable only by the conjunction of two or more instinctive urges, cf. p. 53.

Indeed, after a recognition of human instincts for about half a century there is now a definite tendency on the part of the behaviourist psychologists to return to the pre-Darwinian concept that man has no instincts. Watson, in particular, claims to have shown by repeating with children experiments similar to those originally performed by Pavlov on dogs, that fear (and other) responses can be ' conditioned ' in endless ways ; that ' every act has a genetic history. . . . No theory is required to explain it—only systematic observation of genetic facts ' ; in short, that all behaviour is simply to be explained in terms of ' training and conditioning.' In summing up this position Thayer writes as follows (*The Passing of the Recitation* (1928), p. 96) : ' Not only are instincts tending to disappear in present-day psychology, but those instincts to which a conservative clings do not possess the characteristics of specific Situation-Response bonds.' The fact of the matter is, of course, that the Hormic school has never postulated that rigid specificity for all instinctive responses. The behaviourists, in terms of their mechanistic theory, were compelled to postulate specificity in the ' stimulus-response bonds,' and now that it is apparent that such specificity cannot be maintained, they incline to drop the whole idea of instincts—both for men and animals. Because of this controversy over the connotation of the term ' instinct ' McDougall in his latest work, *The Energies of Men*, substitutes the word ' propensity.' Since, however, the behaviourists incline to drop the word altogether, and since it is not likely that it will fall out of use entirely, it would seem better to retain it with the clear understanding (*a*) that no rigid specificity between stimulus and response is necessarily implied ; (*b*) that the instincts are not to be regarded as separate entities operating independently of the general life-urge of the creature, but rather as particular channels along which that life-urge finds outlet, this canalization being the result of the racial experience of the creature, and determined by natural selection ; (*c*) that each channel represents a *characteristic type* of activity (executive aspect) which tends to drain off the life-urge, whenever conditions are favourable (cognitive aspect), to the accompaniment of an emotion unique in quality.

3. The pre-Darwinian view that man was supplied with intelligence *instead* of instinct raises the important question of the relationship between instinct and intelligence. Though man might be willing to deny that he is possessed of instincts, he could hardly deny all intelligence to the animals, especially the higher animals; but even at the lower end of the scale the first glimmerings of intelligence are discernible. True, even after many repetitions the one wasp did not adapt its behaviour at all, but the other 'learned by experience' after only four repetitions; and there is also the instance of a wasp using a pebble to assist in beating down the soft earth over the hole.

The fact is that so long as instinctive responses are entirely rigid and specific in the cognitive and executive aspects there is no possibility of adaptation to the slightest variation in conditions, and a creature so handicapped could not long survive in the struggle for existence. But on the other hand, with a steadily increasing degree of modifiability, there is also an increasing need of the selective and directive influence of intelligence; for variability, while it makes adaptation to new conditions possible, also increases the possibility of mistimed and misdirected activity—of 'taking the wrong turning.' Thus intelligence is gradually called into operation *in the service of instinct*; and as the degree of modifiability increases, so intelligence is more and more exercised, and like every other function it is developed by use. Naturally, therefore, since in man the instinctive responses are least specific, in him the intelligence reaches its fullest development within our ken. The precise nature of intelligence itself is at present quite beyond our ken; the most that we can say is that it is an ultimate quality of mind.[1]

It should be made clear that when, as in the foregoing paragraphs, we contrast 'specificity' with 'modifiability,' it is not intended to suggest that a single response gives place to a number of responses, each one being independent of the others ; the difference is not essentially *numerical*, but is a *matter of complexity*. At any given stage a creature's response to a situation has the quality of wholeness—is a *gestalt*, to use a term coming much into vogue in psychology at the present time—in which the particular movements are entirely conditioned by the whole. For example, the moth's response to a light is a *gestalt* involving only movements of circling and approaching; the spider's response to oscillation of her web is a *gestalt* involving originally rapid approach and seizure of prey, but may become more complex by the inclusion of retiring, waiting, and reapproaching. The original 'approach and seizure' remains, however, the cardinal characteristic of the whole, conditioning all the variations. In short, to say that as we advance up the scale of life we find increasing modifiability is to say that responses become more complex but still unified ; or, to put it in the other way, 'it can be established both ontogenetically and phylogenetically, that in descending to more primitive conditions we do not find any such thing as relative resolution of the textural character of the elements, but a diminution in the discrimination of the single constituents, a predominance of total qualities.'[1]

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[1] This does not preclude us, however, from analysing the factors operating in intelligence; nor from applying increasingly accurate measurements to its degrees.

4. We now see that, in describing education in the narrower sense of the term as the modification of behaviour in the light of experience, we mean the introduction of modifications into instinctive behaviour on its cognitive and executive sides, with an ever-increasing operation of intelligence in the direction of these modifications. The varying of the reaction is the more obvious of the two, though not necessarily the more important. Cognitive modification implies the arousal of a given instinctive response by a new, a different situation from that with which it is innately connected. It is worth remembering in this connection that Plato declared it to be of the very essence of education that we should teach the child 'to love the right things and to fear the right things.'

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[1] Petermann, *The Gestalt Theory* (Eng. ed. 1932), p. 311.

Suggested topic for class discussion or debate.—Individual students to present cases of instinctive behaviour as observed by themselves; discussion on the degree to which these are purely instinctive or modified by experience.

Books which might be consulted:

W. McDougall, *Social Psychology* (1908; 22nd ed. 1931); and *An Outline of Psychology* (1923; 4th ed. 1928).
C. Lloyd Morgan, *The Animal Mind.* 1930.
J. Drever, *Instinct in Man* (1917; 2nd ed. 1921); and *An Introduction to the Psychology of Education* (1922).
E. L. Thorndike, *Educational Psychology: Briefer Course.* 1903.
G. H. Thomson, *Instinct, Intelligence, and Character.* 1924; 2nd ed. 1932.
C. Spearman, *Psychology down the Ages.* 1937.
F. Banks, *Conduct and Ability.* 1936.

CHAPTER IV

GENERAL SURVEY OF THE PRIMARY INSTINCTS, WITH SPECIAL REFERENCE TO MAN

Yet we are the movers and shakers
Of the world for ever, it seems.

1. In the previous chapter we sought to make clear the general nature of instinctive behaviour and its relationship to intelligence. We now venture on a statement which at an earlier stage would probably have met with opposition, but which may now serve simply as a challenge to the reader to pursue the matter further. That statement is that *all* behaviour is ultimately traceable to the instincts. But in considering this proposition so far as man is concerned it must be borne in mind that in him the instincts are all very highly modifiable; and a further point to be added is that the modifications often take the form of interaction between two (or more) of the instincts. This was well illustrated even in the case of the apes as described by Köhler; for in one instance he tells us that one of the apes, having finally succeeded in solving one of the practical problems set (with the customary bait of a banana), instead of eating the fruit, simply raced round the enclosure in manifest glee. Clearly, therefore, it could not have been the feeding instinct alone which was actuating him in trying to obtain the banana; he was in fact partly actuated by the instinct known as self-assertion, aroused by the problem presented to him. In fact, as we proceed, we shall find ourselves more and more concerned with the interaction and integration of instinctive processes, but for the sake of clearness it is desirable to consider the instincts separately.

2. *The Instinct of Self-assertion*

This instinct is considered first, because although one of the less popularly recognized, it is generally, in children, the most powerful and all-pervading of the instinctive urges. The emotion in this case is sometimes referred to as elation, but the more suitable term is 'positive self-feeling.' The original cognitive aspect is the perception of the presence of others (of the species) and the original executive aspect is to display oneself, to attract notice. The instinct is seen very clearly in a horse or a dog which, in the presence of others, tenses its muscles, and indulges in showy movements; and also in a young child wearing new shoes or new clothes for the first time. A boy, just turned three, was provided with his first pair of real trousers; within a few minutes he was seen standing outside the front gate, with both hands deep in his pockets!

The modifications on the cognitive side may take the form of the ideational presence of others, but, much more frequently, any kind of challenge to one's powers or prowess, e.g. a lid to be fitted on to a tin, has been observed to keep a child, of about three years of age, busy for a quarter of an hour at a stretch; and the Montessori apparatus is one long series of challenges to little people.

On the executive side the modifications may take any form of gaining attention. For example, nearly all children go through two distinct phases in regard to the activity of using a spoon: in the first phase they clamour for it and are filled with positive self-feeling in gaining notice by learning to feed themselves; but, by the time they can feed themselves with ease, the activity has ceased to attract much notice. They thereupon decide that they cannot feed themselves, but must be fed—as the best means of regaining full attention at meal times. So it is, to a lesser extent, with the achievement of dressing; and what parents have not been pestered by the children, when at length safely tucked in bed at night, presently calling out for a 'drink of water' or to have 'a blanket put right'—or any other excuse to gain attention! The problem, of course, for the parent, as for the teacher, is to find new and *suitable* 'fields to be conquered.' Nor, of course, is this urge confined to children, as every honest adult will readily admit. We read recently, in the case of a particularly horrible murder in the Western States of America, that the murderer when apprehended asked at once: 'Have they given me big headlines in the papers?' It seems difficult to believe, but it is no less a fact, that a perversion of this instinct, the desire for notoriety, is a factor in producing crime.

3. *The Instinct of Self-submission*

This instinct, which in a sense is complementary to the above, is not generally so powerful, nor is it so readily recognizable as one of the primary instinctive urges; but as we shall see later it plays an exceedingly important part in connection with the development of character. The emotion in this case is known as negative self-feeling and the original cognitive aspect is the perception of the presence of another or others recognized as superior. The original executive aspect takes the form of a relaxation of the muscles and the act of approach with all signs of willing, even glad, submission. The most familiar example in the animal world is to be seen in the case of a dog which meets another and larger dog (providing that the latter is not showing signs of aggression—in which case fear would be aroused). It is also often seen in a dog in the presence of his master, and the following incident illustrates the operation of this instinct in the case of a young child. A girl, aged two and a half years, was playing with her elder sister aged approximately five years, i.e. nearly double the age of the former and an Olympian in her eyes. Presently the younger child in some way interfered with the progress of the game that was afoot and received prompt chastisement from the leader. Although by no means lacking in spirit generally, her only response on this occasion was: 'What did I do wrong?' Obviously her whole concern at the moment was to submit to, and follow the leadership of, her elder sister.

On the cognitive side this instinct is modified to include the ideational presence of someone greater, and the attitude of worship in a sincere religious devotee is almost entirely an expression of this instinctive urge. The instinct is also aroused by great and beautiful works of art, magnificent architecture, or grand scenery. To some persons again, the vast mass of exact information represented by the *Encyclopaedia Britannica* is a stimulus to negative self-feeling; and stage fright (though a very complex state) contains an element of this emotion, aroused by the presence of mere numbers, even though the persons concerned taken individually would not be regarded as superiors.

4. *The Instinct of Flight*

This is one of the most readily recognized and, in animals, one of the commonest of the instinctive urges. The emotion is fear and the original cognitive aspect is the perception of a loud, especially a deep-toned, noise, or of something so strange as to be uncanny; and, in some children at any rate, the perception of a lack of support. The first of these was well illustrated in the case already mentioned (p. 27) of my child fleeing in genuine fear when I roared from under the bed; and I myself on more than one occasion have experienced a momentary thrill of genuine fear occasioned by the perception of a deep-toned noise at a time when I have been deeply preoccupied in reading or thought; in fact, on these occasions, it has seemed rather that my full attention has been drawn to the noise by the thrill of fear which it quite instinctively occasioned.[1]

An interesting illustration of the arousal of fear by the uncanny is given by James.[2] A dog was lying half asleep on the hearth when his master contrived to draw across the room a bone, attached to an invisible thread. The dog, awakening and seeing the bone apparently moving of its own accord across the floor, was so terrified that it collapsed in a kind of fit. Most of us, also, can testify from personal experience to the truth of Coleridge's description of a similar arousal of fear:

> All fixed on me their stony eyes,
> That in the moon did glitter.
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> . . . .
>
> I could not draw my eyes from theirs,
> Nor turn them up to pray.
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> . . . .

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[1] Such experiences, which doubtless most readers can parallel, form an interesting piece of evidence against the James-Lange theory of the emotions; also against Drever's view that emotion is aroused only when an instinct is impeded.

[2] *Principles of Psychology* (1890), vol. ii, p. 420.

Like one, that on a lonesome road
Doth walk in fear and dread,
And having once turned round walks on,
And turns no more his head ;
Because he knows, a frightful fiend
Doth close behind him tread.

The original executive aspect of this instinct is flight or, in some cases, immobility. Recent researches into the functioning of the ductless glands have brought to light the interesting fact that when fear is aroused the supra-renal capsules secrete an additional flow of adrenalin, which has far-reaching effects : it quickens the breathing so that additional oxygen is taken in ; it hastens the conversion of glycogen into sugar by the liver ; it quickens the heart's action so that the additional supplies of oxygen and sugar are more quickly conveyed to the cells, especially to those of the skeletal muscles since the adrenalin also causes a constriction of the peripheral capillaries. It will be observed that the total effect of these changes is to fit the body for violent activity in flight by making immediately available to the muscles concerned the necessary components for enhanced combustion. Incidentally the adrenalin also causes a dilatation of the pupils of the eyes, giving a wider range of vision, and it stimulates the organs of excretion. Again, the bearing of these effects on flight is obvious.

The cognitive aspect is modified to include the perception of objects associated with the original stimuli, e.g. a man, becoming associated with the sound of his gun, terrifies creatures which at first showed no fear of man ; and the modifications are extended to include the perception of a great variety of objects that have caused harm in the past experience of the individual. With reference to the executive modifications it should first be noted that under civilized conditions the majority of the dangers which threaten are of such a nature that an attempt at headlong flight would be about the worst possible reaction. If we are to judge by the statistics of deaths due to accidents, then by far the most dangerous sphere in the modern world is the public street or road. Yet if one is driving a motor vehicle and there is sudden danger of a collision, any tendency to flight must be disastrous ; and in the same way the worst possible way for a pedestrian to cross the road would be to make a blind rush for it. Think, too, of the dangers in factories and mines ; there must be few indeed where simple flight would be of any avail. Hence the executive modifications in this case take the form of a conjunction of fear-flight with self-assertion. The resulting emotion is *caution*, and the executive aspect becomes some form of skilful manipulation of the factors involved in the situation, either to evade or divert the danger. The motorist may, according to his judgment, swiftly accelerate or he may, in one motion, have one foot on the clutch, the other on the foot-brake, and one hand on the hand-brake. The subject of fear will be referred to again when we come to the consideration of the problem of discipline.

5. *The Instinct of Curiosity*

The emotion in this case is referred to as wonder, and the primitive cognitive aspect is the perception of something which is *partly familiar and partly unfamiliar*. It must be carefully noted that the wholly unfamiliar will either pass entirely unnoticed or will arouse fear. It is recorded, for instance, that when Dingiswayo returned to his people after his long sojourn at the Cape the greatest curiosity was aroused by his horse ; the natives knew something of domestic animals ; superstitious fear was aroused, however, by his riding the horse. Similarly, Stefansson in *My Life with the Eskimos* describes how those primitive people (who had never before encountered a European) were terrified by the sound of his gun, but were quite unmoved by the fact that he had pierced a stick with it at a distance of two hundred yards. He adds : 'If you were to show an Eskimo a bow that would in the ordinary way shoot fifty yards further than any bow he ever saw, he would never cease marvelling.' In the same way, several native domestic servants have listened to the loud-speaker in my house without evincing any wonder as to *how* the music is produced. On the other hand, all will have observed the alternation between fear and wonder in a dog or a child in the presence of some very strange object; the gradual edging, yet eager approach alternating with sudden retreats.

Naturally this need of *partial* familiarity is of great importance in considering the preparation stage of a lesson; to dwell for any length of time on the wholly familiar is to invite inattention through boredom; but equally true it is that to plunge directly into some entirely new and unfamiliar matter, without linking it up with some familiar aspect of life, is also to invite inattention. We should *begin* with the familiar; a question or two which the children *can* answer, at the outset, gives them a welcome opportunity for self-assertion and secures their co-operation on that account; but we should presently try to give the matter a turn and disclose an unfamiliar aspect—a question at this stage which the children *cannot* answer will arouse both their curiosity and further self-assertion.

The original executive aspect of this instinct is to investigate the unfamiliar object, by inspection, by handling, perhaps even by smell or hearing.

As regards the modifications, it will be realized that the cognitive aspect as stated above is broad enough to cover all modifications. On the executive side we find again that the modifications are mainly the result of a conjunction with the instinct of self-assertion. It is this combination which is at the root of most of the voyages of discovery, explorations, scientific expeditions, whether these be to the South Pole, to the heart of Tibet, or to the top of Mount Everest. And it is the same conjunction which is the driving force in most researches whether in science, history, language, or philosophy. Its importance therefore is self-evident.

6. *The Instinct of Pugnacity*

Here the emotion is anger. The original cognitive aspect is peculiar in that it is, in a sense, secondary; for this instinct is aroused when some already-active instinctive process is impeded or thwarted, especially if this appears to have been done wilfully. And the original executive aspect takes the form of a violent bodily attack intended to break down the opposition, or to remove the obstruction.

It is always a dangerous instinct and it is also peculiar in that sometimes the executive modifications, effected by conjunction with the instinct of self-assertion, and taking the form of cunning and malice by which to destroy the opposition, are even more dangerous and undesirable than the primitive onslaught with 'tooth and claw.' A very moderate degree of anger in conjunction with positive self-feeling may be of service in providing the 'little extra' when faced by an especially difficult problem; but anything more than that is wholly undesirable, firstly because it is liable to induce a use of brute force, which may do irreparable damage, when a moderate but carefully directed force is all that is required. Secondly, for physiological reasons, anger is also inhibitive of the highest exercise of thought or reason; this is due to the fact that anger, like fear, stimulates the supra-renal capsules to the production of extra adrenalin (it makes possible violent activity in fight as well as flight). But the important point here is that the blood supply to the brain is again restricted in order that the skeletal muscles may have more, with the result that the cells of the cerebral cortex, being deprived of their full supply of oxygen, cannot function fully. There is but one modification which may be regarded as really safe and useful, viz. that which results from a combination with the parental instinct to give what is known as righteous indignation. As McDougall points out, this conjunction is the basis of our legal codes.

7. *The Instinct of Repulsion*

The emotion in this case is disgust. The original cognitive aspect is the perception of something slimy to the touch or nauseous to the smell or taste; and the executive aspect is to thrust away the offending object, to spit it from the mouth, or to vomit. This instinct does not play a very extensive role in civilized life, though one of the cognitive modifications is important. This aspect is extended to include the perception of anything that is mean, revolting, or despicable in behaviour; we sometimes speak of a 'slimy action.' In so far as this modification tends to make us repel or reprobate such behaviour (though not the sinner, even though it be oneself) it is a valuable factor in the modification of conduct.

8. *The Gregarious Instinct*

There is a peculiar difficulty here in that there is no word in ordinary speech which may be used for the emotion of this instinct and, so far, no name has been agreed upon by psychologists. But all of us have experienced the emotion, for it is that which is aroused when we perceive ourselves to be separated, or markedly different, from our social group or from others generally. For such perception is the cognitive aspect, while the executive aspect is to rejoin the group. Not all creatures are gregarious. Galton, however, has described the uneasy movements, the obvious disquietude, of a buffalo separated from the herd and the manner in which, when it descried the herd in the distance, it raced off and buried itself in the midst thereof. I recently had a few ducks in a wire enclosure ; occasionally one would get out, but so long as it was only one my garden, fifty yards away, was in no danger. But, if two or three got out, a marauding expedition would start at once. The common fowl on the other hand is far less gregarious, and the cat has always 'walked by himself.'

Man on the other hand is strongly gregarious ; hence his willingness to parade the streets, for no apparent reason, on such occasions as Christmas Eve ; hence also the fact that solitary confinement is one of the most painful forms of punishment. (To this aspect, also, we shall return when dealing with the problem of discipline.) The cognitive modifications include the perception that one is different in dress, manners, or ideas from others, and this accounts, on the executive side, for the power that lies in fashions, customs, and traditions. In conjunction with positive self-feeling (and possibly other emotions) this urge is responsible for much propaganda ; for one way of rejoining the herd is to persuade them to join us !

Another peculiarity of this instinct lies in the fact that gregarious creatures experience what is known as *primitive* sympathy. That is, they tend to experience an emotion upon the perception of the expression of that emotion in another of the species, without themselves perceiving the original stimulus to that emotion. The value of this to a herd, in which one of the members upon perceiving some danger gives vent to a cry of fear, thereby at once arousing the same emotion in the whole herd, is obvious. And the same, of course, would be true of a predatory herd, a hunting cry being given upon the perception of quarry. Köhler describes a similar manifestation in apes. When one of the number had built up an edifice of boxes to get at a banana attached to the roof and was straining up to reach the fruit, another ape watching the process was observed to raise his hand also—in primitive sympathy. (Köhler emphasizes that there was no evidence of any real desire to *help* the other.) The occurrence of the same thing in man is well illustrated by the story of the Irishman, who, coming suddenly upon a fight outside a public-house, at once began to remove his coat, asking : 'Is this a private fight, or can any one join in ?'

This tendency is of the utmost importance, as we shall presently find, in connection with the inspirational aspect of education ; i.e. in all cases where we seek to arouse desirable emotional responses in the children ; for obviously, in order to do this, the teacher will require genuinely to feel and to evince the emotion it is desired to arouse. For example, in presenting a poem for appreciation, there is but one method that will suffice : the poem must be read or recited *with appreciation.* The teacher must show his own enjoyment of it. It has been well said that 'appreciation cannot be didactically taught ; it must be sympathetically aroused.' In this connection it may be emphasized at once that, though one may simulate some of the more obvious expressions of the various emotions, the finer shades, involving minute modifications of facial expression, a peculiar 'light' in the eyes, or barely perceptible inflections of the voice, cannot easily be feigned ; they are involuntary, yet without them our presentation of the emotion does not ring true. And if it does not ring true it will not have the desired effect on the children, though they also may simulate if they think a particular response is expected of them. Obviously, then, without sincerity nothing but harm can result from any attempt to inspire children. We shall return to this matter in the next chapter.

9. *The Parental Instinct*

In this case the emotion is known as the *tender emotion* (the word 'love' having too wide a connotation and being reserved for a subsequent purpose). The original cognitive aspect is the perception of one's own helpless young, while the primitive executive aspect is to cover and shield from harm. Clearly it is one of the most deeply rooted and powerful of all the instincts ; it was this one which supplied our first two examples of instinctive behaviour, in the yucca moth and the solitary wasp. Further, it is to be carefully distinguished from the sex instinct, with which it has of course close connections, but from which it is unmistakably different in all three aspects, cognitive, affective, and executive.

The cognitive modifications are very widely spread ; even in animals it has often been observed that the parental instinct can be aroused by the young of other animals ; in man it is readily extended to include the aged, the sick, and the weak ; also to include primitive or downtrodden peoples, dumb animals, and even delicate or fragile objects such as pieces of apparatus or fine china. And the executive modifications are, if anything, even more varied and important. Thus they include, in the first instance, many activities designed for the protection of one's own young from dangers which civilization has either produced or brought to light. Thus we generally sterilize the baby's milk to protect him from bacteria, and we provide specially manufactured bottles that are easily kept clean, for the same reason ; and the list of similar protective devices might be extended *ad lib.* It is this same instinctive urge, in conjunction with self-assertion, which is responsible for much of our legislation, such as the Child Protection Acts, the Factory Acts, the Abolition of Slavery, and the Abolition of Flogging ; for innumerable institutions, not only children's homes, but also hospitals, asylums, rescue homes, and homes for stray animals; and finally many societies are inspired chiefly by this instinct, such as the Society for the Prevention of Cruelty to Animals, the Child Welfare Society, the Prisoners' Aid Society, and so on. These modifications might be extended to include even much of our scientific investigations, but probably enough has been said to indicate the extent to which this instinct is operative in actuating our behaviour.

McDougall has referred to this instinct as 'Nature's most beautiful invention,' as the 'mother of intellect,' and the 'mother of morality.' We saw how the high degree of modifiability in the instincts of man gives scope for, and therefore stimulates, a correspondingly high development of intelligence. But this high degree of modifiability and the absence of specific and well-adapted responses at the outset make the human child a very helpless creature indeed; this modifiability is, in fact, only possible because of the operation of the parental instinct which ensures the care and protection of the child during this necessarily helpless period. Moreover, we may note that as we advance up the animal scale, the development of intelligence increases *pari passu* with the lengthening of the period of dependence made possible by the increased functioning of this instinct. There is no doubt, therefore, that it merits the title of the 'mother of intellect.' It is interesting to note that Professor Godfrey Thomson, in his account of the development of intelligence,[1] makes a great deal of the play activities of animals. His point is that, when in the course of evolution there appeared animals given to play, this meant that the modification of instinctive responses upon which, as we saw, all adaptation to varying situations, and therefore all progress, depends, could be more freely tried out. For in play, the ordinary instinctive responses are brought into operation in circumstances which do not *demand success, or a penalty for failure*. Consequently, all manner of modifications may be freely tried without risk or prejudice, and the best may be selected and exercised. But while this is undoubtedly true, it does not get away from the fact that the parental instinct is still the cardinal factor; for a period of playfulness for the young becomes possible *only* when the parental instinct is sufficiently highly developed to provide nurture and protection for those young, during that period. With a rudimentary parental instinct, only the very minimum of modifiability of instinctive responses and of playfulness is possible.

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[1] *Instinct, Intelligence, and Character* (1924), p. 33 et seq.

On the other hand, as Dewey has pointed out, this period of obvious dependence on our parents over a number of years is one of the main influences protecting us from that 'unnamed form of madness'—the idea that any one of us can be independent of his fellows. It is partly on this account that the parental instinct merits the title of the 'mother of morality'; and partly because the tender emotion is the only wholly altruistic urge; all the other instincts are directed, at least chiefly, towards securing some advantage for self; in this one alone the idea of self and of benefits for the self is entirely subordinated to the well-being of another or others. And this is the essence of morality.

10. *The Sex Instinct*

Much harm has resulted in the past from the adoption of an attitude of mystery or shame or fear in regard to this instinct. It should, and can, be treated, in presenting the matter to adolescents, with perfect frankness and sincerity. Again we sometimes hear references to 'lower instincts'; besides being a futile transgression of the point just made above, such an expression is quite unpsychological. All the instincts might be described as low or high according as they are directed into undesirable or desirable channels. 'The quality of good and evil lies not in impulses as such, nor in objects as such, but in the relationship between impulses and objects.'[1]

In adolescents and adults the sex instinct is certainly one of the most powerful of all the instinctive urges; it is therefore all the more capable of being turned to good account provided that it is understood and directed aright. It certainly has often been much misunderstood and amongst other things the suggestion has often been made by quite responsible people that it is, in young men at any rate, uncontrollable.

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[1] Lippmann, *A Preface to Morals* (1929), p. 168.

It is uncontrollable just so long as we choose to consider it so, and the dictum that 'a young man must sow his wild oats' is an excuse usually put forward in defence of wrong done or contemplated.

The emotion in this case is referred to as *lust*; the original cognitive aspect is the perception of the body of one of the opposite sex and the original executive aspect is the act of coition, the achievement of physical union with one of the opposite sex. In infancy, as the psycho-analysts have shown, this urge passes through a phase, not necessarily hetero-sexual, in which the union is achieved by the child taking the mother's nipple into the mouth. In this act, he seeks not only nourishment, but also love ; and this oral phase persists in kissing.

On the cognitive side the modifications include the ideational presence of the body of one of the opposite sex and also, to a considerable extent, articles of clothing or other objects specifically associated with the other sex. On the executive side the modifications are most frequently the outcome of conjunction with the parental instinct, since the functioning of the one leads on normally in the course of nature to the operation of the other. And since the parental instinct involves some years of self-sacrificing effort, it naturally imposes a controlling and benign influence on the other—benign, because there is suffused with the lust of the sex instinct the tender emotion of the parental instinct, which, as we saw, is altruistic and promotes thoughtfulness for others, more particularly for the partner of the opposite sex and the children.

Because of this controlling influence, and because of the responsibilities of parenthood, the tendency amongst civilized peoples is that the age of marriage is more and more deferred ; and there is therefore the more need for executive modifications in other directions. These most commonly take the following forms :

(*a*) In conjunction with the instinct of self-assertion the sex instinct operates to give greater vigour to activities such as the pursuit of one's studies, the development of a business or professional practice, these being intended to secure a good position in life and thus make marriage possible.

(*b*) The pursuit of art, music, or poetry : originally these activities served as means of sexual attraction, but as so frequently happens, the means have become an end in themselves ; they nevertheless still provide a modified outlet for the sex instinct, again in conjunction with self-assertion and also self-submission.[1]

(*c*) An effort to transcend the urge to physical oneness, to seek rather a realization of spiritual oneness with another or others through understanding sympathy and service. The great religions of the world and the teachings of Plato all point to the realization of this spiritual oneness as an 'ultimate good' for mankind. 'If the sexual impulse were not deeply related to the religious life, the preoccupation of churchmen with it throughout the ages would be absurd.'[2] Doubtless the transmutation of this powerful urge towards physical oneness into a striving after the realization of spiritual union is very difficult of attainment : but many things that are really worth while are difficult. 'Facilis est descensus Averni,' but 'per ardua ad astra.' That this transmutation is possible seems to me beyond question since (despite the disagreement of some psychologists) it has certainly been achieved by many splendid men and women both within and without religious orders.

One has read, in books dealing with adolescents, of mysterious and uplifting urges, which have later given rise to disappointment and disillusionment because they have apparently turned out to be 'only sexual urges.' One would suggest that the disillusionment is not a necessary outcome since such urges are essentially towards the realization of oneness, and it rests with the individual concerned whether they are directed towards the physical or the spiritual plane. Even after marriage the same need exists for seeking spiritual rather than physical oneness ; for the whole trend of evolution is towards a reduction in the number of offspring and an increase in the care bestowed upon them. Naturally, in marriage, the most important modification is through conjunction with the parental instinct, as was mentioned above.

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[1] Sadism is a psychopathic form of the conjunction of the sex instinct with self-assertion, and masochism is the corresponding conjunction with self-submission.

[2] Lippmann, op. cit. p. 90.

(*d*) It remains to mention the various forms of substitute gratification, which at best are a great waste of emotional energy which might be directed into the above three channels, and at worst often mean a degradation of character. Further reference to these is made in dealing with the unconscious motive (Chapter Fifteen).

11. *Other Instincts*

There are sometimes included among the primary instincts of man a collecting instinct and a constructive instinct ; but inasmuch as these are not found amongst the higher animals in any marked degree it seems doubtful whether they should be given the status of separate instincts, especially as they can quite well be accounted for as modifications of the executive aspect of self-assertion.

Other writers, again, make much of an instinct of imitation ; but the truer view would seem to be that adopted by McDougall and by Dewey. It is very clearly stated by the latter in *How We Think* (1910) : 'Educators (and psychologists) have often assumed that acts which reproduce the behaviour of others are acquired merely by imitation. But a child rarely learns by conscious imitation ; and to say that his imitation is unconscious is to say that it is not from his standpoint imitation at all. The word, the gesture, the act, the occupation of another, falls in line with *some impulse already active* and suggests some satisfactory mode of expression, some end in which it may find fulfilment.'[1] It will be easily observed that most instances of imitation are a resultant of the interaction of the instinct of self-submission and of self-assertion. The child is especially prone to imitate the actions or peculiarities of those he admires—the urge to follow a leader ; at the same time the performance of the act in most cases offers an opportunity of securing approving attention—the urge to self-assertion.

But, although not a separate instinct, imitation, does, of course, play a most important part in education. In numberless ways parents and teachers undoubtedly do influence the behaviour of children through this tendency —either for good or ill.

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[1] Dewey, op. cit. p. 160.

The above ten instincts, on the other hand, do not constitute an exhaustive list ; the feeding instinct, for instance, has been omitted and also the instinct of appeal, affording the reader an opportunity to think out for himself their several aspects and modifications. Although the former is certainly one of the most fundamental of all instincts, it tends with the progress of civilization to become less important as a drive to human behaviour ; and its application to education in the narrower sense is very circumscribed. Sufficient has been said, in any case, to support the contention that all behaviour can be traced ultimately to the instincts ; and to indicate the scope and interactions of the more important instincts.

One point remains to be touched upon. Though every normal human being inherits all of these instinctive tendencies, all do not inherit them in the same degree of strength. In one this instinct is stronger and, in another, that ; and upon these differences depend what we call a man's *disposition*. Thus we have a fearful disposition, a tender disposition, a pugnacious, an assertive, or an amorous disposition, according to the dominance of the instinct concerned.

Suggested topic for class discussion or debate.—The extremely non-specific nature of human instincts renders them of far greater (or less) significance.

Books which might be consulted :

W. McDougall, *The Energies of Men* (1932) ; and as for previous chapter.
J. B. Watson, *Psychology from the Standpoint of a Behaviourist.* 1919 ; 3rd ed. 1929.
M. Sturt and E. C. Oakden, *Modern Psychology and Education.* 1926.
R. S. Woodworth, *Dynamic Personality.* 1918.
Thorndike, Drever, and Thomson, as for the previous chapter.
F. Banks, *Conduct and Ability.* 1936.
A. G. and E. H. Hughes, *Learning and Teaching.* 1937.
C. Spearman, *Psychology down the Ages.* 1937.
C. W. Valentine, *The Psychology of Early Childhood.* 1942.
C. A. Claremont, *The Innumerable Instincts of Man.* 1940.

CHAPTER V

EMOTIONS AND SENTIMENTS

Whose passions not his masters are.

The Importance of the Emotions

1. In describing the instincts in the last chapter, we referred frequently to modifications of the cognitive and executive aspects, but little reference was made to modifications of the affective aspect, the emotions. The fact is that, so long as the modifications are effected without involving a conjunction with any other instincts, i.e. so long as each instinct operates independently, the emotion which is characteristic of it remains constant in quality, and qualitatively unique, though it may vary in degree of intensity. It will be appreciated that, just as we could not explain to a man who had been born blind the quality which we call yellow or blue, so we cannot give any adequate description of any one of the emotions. Each of us has experienced fear, positive self-feeling, and the rest, and if we think of such experience we shall agree that, while we may have a greater or less intensity of fear, the quality of that emotion is constant and unique. It is true that we may have compound emotions, one or two of which have already been referred to, e.g. caution, which is positive self-feeling compounded with a moderate degree of fear; we shall return to this aspect later. For the moment, let us concentrate on the fact that each instinct has a constant emotional aspect. Also, each instinct when aroused carries with it an urge to a particular type of activity, and this urge is also constant; it persists until satisfied by the performance of the activity. The 'Bluebeard' fairy-tale illustrates this well in the case of curiosity-wonder. Again, consider this incident. A child, aged three and a half years, is happily amusing himself when a casual visitor drops in for a few minutes to talk to his mother. Self-assertion is aroused and

he begins by interrupting his elders' conversation with 'Mum, mum.' After a few repetitions his mother says 'Well?' and answers some trivial question which he puts. Next he clambers up on to her lap and tries to divert attention to himself by putting his hand over his mother's mouth when she speaks to the visitor. His hand being removed, he begins to cry, and persists even when told that he will be removed to another room if he does not stop. He is finally removed, but continues to demand attention by bellowing. We have then, in each case, a constant emotion (varying in intensity) and also a constant urge to activity of a particular type (also varying in intensity). It is not unreasonable to suggest that the emotion, which is constant and characteristic, supplies this persisting urge which is also constant and characteristic for each instinct.

2. In support of this claim, consider also the following facts:

(*a*) Young children's descriptions of objects of their experience are always in *emotional* terms. Which, for instance, of the following list of adjectives that might be applied to a dog would be used by a child of say three years old: nice, black, hairy, tiny, dear, fat, big, long-legged, biting, slow? You will agree probably that 'black,' 'hairy,' 'fat,' 'long-legged,' and 'slow' would rarely, if ever, be used; and to object that some of these words would not be in the vocabulary of a child of three simply emphasizes the point which I wish to make; for a child picks up, as part of his active vocabulary, words which have meaning to him. Now the five words just cited, as applied to a dog, refer to purely objective qualities;[1] the other words have *emotional* significance —'nice,' 'tiny,' and 'dear' are associated with the tender emotion; 'big' and 'biting' with fear. In short, he uses emotional terms; they are meaningful to him.

(*b*) Children's first meanings are *activities*; the bath, for instance, has for the young child nothing to do with cleaning; it simply means the activity of splashing about in the warm water; the ball means the activity of rolling and chasing it ; the spoon means either the activity of eating or of dinning on the table as a means of self-assertion, attracting attention ; and the dog means either the activity of fondling (if he is described as 'nice,' 'tiny,' etc.) or of retreating and taking shelter beside some adult (if he is described as 'big' or 'biting').

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[1] 'Fat' would have emotional content as applied to a piece of chocolate; 'hairy' might also, as applied to a vest!

These facts, that the child's meanings are activities and that he describes the objects which suggest these activities in emotional terms, again indicate the very close connection between emotion and activity ; indicate, in fact, that each object means *both* an activity *and* an emotion. Moreover, in his experience, *one* object means a certain activity, A, and also a certain emotion, X ; while another object means a different activity, B, and also a different emotion, Y. (A doll, for instance, means the activity of nursing and fondling and also the tender emotion ; a big dog means the activity of retreating for shelter and also the emotion, fear.) He always experiences A with X and B with Y ; but never A with Y nor B with X. Consequently he comes, quite unreflectingly, to regard the emotions as the motive forces of behaviour.

On the basis of these facts and of those previously considered in paragraph 1, it will now be laid down definitely that the emotion of each instinct constitutes the persisting urge of that instinct, its conative core ; or, generally, that the emotions are the mainsprings of activity ; that all activity is emotion-prompted. A little consideration of everyday occurrences at once indicates that the common sense of 'the man in the street' has always adopted this view : he did this because he was annoyed, or that because he was afraid, or something else because he 'felt sorry for the chap' (tender emotion). Examine the reasons which you give for any of your actions and you will find that, sometimes quite patently, sometimes lurking half hidden, it is an emotion which is assigned as the motive force.

The importance of this can hardly be over-estimated since it implies that, if we wish (as we constantly do, in education) to influence the behaviour of others, we must first influence the emotions ; or, more precisely, we must arouse in the person whose behaviour we wish to modify the right emotion, the emotion calculated to prompt the type of behaviour we desire. This is where psychology comes to the aid of common sense, by disclosing clearly the various emotional forces with which we have to deal, the conditions likely to arouse any particular one, and, above all, as we shall see, the way in which these emotional forces may and should be combined in order to secure the best effect in behaviour. The principal human emotions, in their simple form, have already been indicated, together with the type of action to which each one prompts, and we have seen that the conditions under which they are aroused include (i) the original cognitive aspects of the various instincts and (ii) primitive sympathy. This latter is of such far-reaching importance as to warrant special consideration.

3. It is very widely recognized at the present time, even by leading scientists themselves, that great danger arises from the fact that intellectual and technical developments have so far outstripped moral and ethical developments; from the fact that we have in a very large measure gained control of the enormously powerful mechanical forces of nature, but have comparatively little knowledge or control of the human motives (i.e. emotions) which are mainly responsible for the uses to which the natural forces are put. I say 'mainly responsible' because of course the intelligence is a directing force; but it must be remembered that intelligence is developed *in the service of the instincts*, that the intelligence operates to bring about the more rapid and more effective attainment of our ends, and that those ends are determined mainly by the instincts, or conjunction of instincts, that are in operation—or more precisely by the emotions which are aroused, since they are the motive forces, impelling towards definite types of activity or ends.[1] The importance is obvious, therefore, of arousing the right emotional response to given situations—or, as Plato has it, of teaching children to 'love the right things and to fear the right things.' How is it to be done?

4. It is to be done chiefly by the play of primitive sym-

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[1] For human 'ends,' as Aristotle insisted, are to be conceived not as states, but as activities.

pathy in the presentation of great literature and history; and, to a less extent, in almost any subject. In his scheme of education for the young Plato would have no stories told to them which depicted either human beings or gods behaving in a manner that was mean, undesirable, or unworthy; for 'they mould their souls by the tales they tell.' The children must be led to contemplate and admire only what is noble and uplifting in human character and conduct; for admiration is an emotion in which negative self-feeling largely predominates (combined with wonder), and negative self-feeling is the urge to follow a lead, to imitate.

Wordsworth also, it will be remembered, in answer to the question, 'Who is the happy Warrior?' tells us:

It is the generous Spirit, who, when brought
Among the tasks of real life, hath wrought
Upon the plan that pleased his boyish thought.

Clearly then, it is the business of the wise teacher to inspire 'his boyish thought,' again, by the presentation of the noblest examples of human behaviour in a wide variety of situations. It would doubtless be very difficult to follow to the letter Plato's injunction to exclude all stories presenting any case of ignoble or unworthy human behaviour, but it is essential that the characters in the story whom the children will admire and with whom they will sympathize should be just, truthful, courageous, generous, and self-sacrificing.

The teaching of history to the lower standards permits of a wide choice from amongst the heroes of all times and all peoples; to-day we may tell of Woolraad Waltemade, to-morrow of Horatius, making a special feature of the generosity of Lars Porsena:

'Heaven help him!' quoth Lars Porsena,
  'And bring him safe to shore;
For such a gallant feat of arms
  Was never seen before.'

Nor are we restricted to history; in connection with the geography there is, for example, the story of Captain Scott's last journey, including the gallant self-sacrifice of William Oates. And at a later stage the science-teaching will be all the better for being illuminated with touches of the human element. What may seem a trivial instance is offered in order to emphasize that we do not need to wait for the 'great occasion' nor make a formality of these inspirational touches; they are all the better for being more or less incidental. Alfred Russel Wallace had worked patiently for many years collecting facts similar to those upon which Darwin based his great contribution to science; and the first publication of their views on evolution had been in a joint paper read before the Linnean Society in 1858. Yet in 1889 Wallace, with wonderful generosity, published his final contribution to the subject under the title of *Darwinism*.

It may be objected that, in presenting the history at a later stage, we cannot falsify the facts; we must present the human actors on the stage of the past with as much accuracy as the records will permit. This of course is true; but, to use an analogy, history is not necessarily a photograph of the past; it should rather be a picture; we are permitted to, nay, we must, make use of light and shade; throw one aspect into prominence and relegate another to the background. And, in any case, whatever may be the aspect of the past which we are presenting, whether ignoble or uplifting, we shall naturally and sincerely display the correct emotional reaction to it, whether of admiration for its nobility or of regret and disapproval for its unworthiness. For it will be remembered that in this way alone can we ensure that, by the operation of primitive sympathy, the desirable emotional response will be aroused in the children.

And once that desirable emotional response has been aroused in relation to any particular type of situation, it will be the more likely to arise should a similar situation occur in the child's own experience. In this way do we 'hand on the flaming torch' to the younger generation to assist them towards nobler living.

The Sentiments

5. Having now traced out the fundamental primitive elements of human behaviour, we take up the consideration of the manner in which human personality and character are developed out of the progressive integration of these elements.

The great importance of the emotions has just been emphasized, yet it is generally held that an emotional person is, *pro tanto*, unstable, erratic, and undependable. To what extent is this true? And, if true, how are we to build on such shifty and uncertain foundations, especially as it would be very generally admitted that the first requisite in character is some measure of consistency: without this, we do not speak of a good or a bad character, but simply refer to the *absence* of character.

It will be admitted at once that the above statement does contain an element of truth; it is true in so far as the emotion of the moment is allowed to express itself directly, and without modification, in behaviour; or, in other words, it is true in so far as any single instinct operates to actuate our behaviour, to be replaced presently by another, according as changes in the external situation 'set off' one or another. This condition is typical of animals and young children, but the operation of a single instinct acting alone rarely, if ever, produces entirely satisfactory human behaviour, typical of civilized man. Even the parental instinct operating alone, though it is the 'mother of morality,' is liable to produce foolish behaviour, e.g. a misguided coddling of a child; and quite obviously anger-pugnacity, or fear-flight, or the sex instinct, operating directly and without modification, would produce behaviour which at best we should describe as barbaric and perhaps even brutal (i.e. characteristic of the brute).

To be typically human, behaviour must be to far less a degree a direct response to the *immediate* situation, and to a far greater degree a response modified by reference to related situations in the past and (to some extent) in the anticipated future. It must not be supposed, however, that this is merely to say that human behaviour is guided by intelligence; there is more in it than that, since throughout the whole scale of life, animal and human, the emotions remain the essential driving forces of behaviour. Therefore, although it is obvious that intelligence plays an important part, the more fundamental modification must lie in the sphere of the emotions. What is this modification?

Or, more precisely, how is this independent and sporadic operation of individual emotional urges to be obviated?

6. In discussing the various primary instincts, in Chapter Four, we saw that in most cases the modifications were the result of conjunction with other instincts. We have now to trace out the precise manner in which these modifications, which are far-reaching in their consequences, are effected. This is the formation of what are known as *sentiments*, and what is meant can best be understood by considering two or three examples.

(*a*) The first illustration may be taken from Dickens's novel, *Nicholas Nickleby*. It will be recollected that the treatment meted out by the villainous schoolmaster Squeers to his wretched drudge, Smike, was such that the very sound of Squeers's voice in the distance would be sufficient to awaken fear in Smike, even though at the moment he was not in immediate danger. This condition was the result of the repeated arousal of fear in Smike by Squeers, which had resulted in the formation of a definite connection between this emotional disposition in Smike and the object arousing it—Squeers. We can imagine that, even if Squeers had on some occasion shown momentary kindness to Smike, the latter would still have responded with fear. Such a condition in Smike we describe as a *sentiment of fear*.

But it is very rare to find a sentiment comprising, as in this case, a single emotional disposition. If Smike had had a spark of spirit left in him, he would certainly also have felt anger against Squeers, in which case the two emotional dispositions, anger and fear, would have formed a sentiment of hatred against Squeers. In that event, if Squeers were present and threatening, Smike would feel fear, but fear tinged with anger; while Squeers's voice in the distance would arouse anger, tinged with fear. But, in any case and always, if Squeers were present to Smike's consciousness, one or other of these emotions would predominate. The final breaking-up at Dotheboys Hall showed that many of the other boys had certainly formed such sentiments of hatred; and on that occasion anger had its hour!

(*b*) Next consider the relationship between Smike and

Nicholas; in this case the emotions habitually aroused by Nicholas in Smike's consciousness were negative self-feeling, which easily predominated, but also a sympathetically-aroused tender emotion and fear, the last being aroused on those occasions when Nicholas was subjected to the ire of Squeers. In this case we should say that Smike had formed a sentiment of devotion for Nicholas.

(*c*) As a third illustration, consider the sentiment which a parent forms for his child. In this case, if the relationship were the normal one, we should speak of a sentiment of love, in which the constituent emotional dispositions would be tender emotion, positive self-feeling, the emotion of the gregarious instinct, fear (for a child is not infrequently in danger either of accident or disease), anger (unless both parent and child are perfect !), and, in most cases, wonder (for it is a wise mother, we are told, who knows her child completely). Here we have a group of five emotions which, having been repeatedly aroused in connection with the child, tend to become definitely organized about the child as a centre. In the best type of the sentiment of love the tender emotion would be dominant and negative self-feeling would be included in the group; but in many parents (especially in fathers) it is positive self-feeling which dominates the group; in this case we should speak of a sentiment of pride rather than of love. What should be the constitution of a child's sentiment for a parent or a teacher?

(*d*) Lastly, let us examine the sentiment of love as it may exist between husband and wife. Typically in this case the sex emotion, lust, is dominant (though it is unfortunate that the word 'lust' has acquired, in ordinary use, rather evil associations; as a technical term it must be freed from these). There are many instances, however, in which the tender emotion is dominant, and certainly no sentiment of love can be satisfactory unless this emotional disposition plays a prominent part. Moreover, the lust is always to be regarded as a potential urge to *spiritual* as well as physical union; and if this potentiality is realized there will be developed that complete 'community of interest' which characterizes the best type of married love. On the other hand, it is when the lust is directed only to the realization of physical union that there follows 'love's sad satiety.' Other important emotional dispositions in this sentiment are negative self-feeling and positive self-feeling, and, to a lesser extent, wonder, fear, and anger.

7. We all of us in the course of our lives form scores of such sentiments, the centres being, e.g., friends, home, books, gardening, music, school or college or profession, animal pets, and so on. An examination of these sentiments brings out the following essential features :

(*a*) A sentiment is a larger or smaller group of emotional dispositions (rarely only one) which, having been frequently aroused in connection with some person or object, tend to be aroused whenever that object is presented to consciousness.

(*b*) One of the emotional tendencies is generally dominant in the group and tends to impart something of its quality to the whole. Further, this whole is not merely the arithmetical sum of the several dispositions ; these do not remain discrete elements in the total, but each sentiment has a unity of its own ; and the particular emotion which happens to be called forth at the moment (in accordance with the situation or behaviour of the object of the sentiment) is always modified by its association with the others, but especially by the dominant emotional disposition of the group ; in short, each sentiment is a *gestalt*, a whole which 'determines the parts retro-actively . . . in which the parts are dependent upon the whole in their so-being.'[1]

Consider, for example, a case in which there are two children in a family, the elder a cripple and somewhat mentally handicapped as well, while the younger is, physically and mentally, all that could be wished. In such circumstances the mother's sentiment for the elder child would in all probability be one of love ; for the younger, it might well be one of pride. If the elder child misbehaved anger might be aroused in the mother, but it would be anger mollified by the dominance of tender emotion in her sentiment for that child. On the other hand, if the younger child misbehaved the anger aroused would be intensified owing to the dominance of positive self-feeling in the mother's sentiment for this child. And, conversely, in case of illness, the fear aroused would be intensified in the first case and mollified in the second, the dominance of positive self-feeling giving more confidence to deal with the illness. In brief, therefore, the mother's anger and her fear are markedly different in their operation according as they are aroused in the first sentiment or the second. This is entirely characteristic of a *gestalt*.

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[1] Petermann, *The Gestalt Theory*, p. 46.

(*c*) This fact—that the dominant emotion of the sentiment always tends to be aroused to some extent and modifies the other emotions which are called forth—is of the utmost importance ; for it is this which prevents that independent and sporadic operation of individual instincts referred to in the question which terminated paragraph 5 of this chapter. It is this which introduces the first element of consistency into behaviour. The formation of sentiments, therefore, is the first step towards the formation of character.

A further illustration of this phenomenon may be given. It will be remembered that when the Greeks had vainly besieged Troy for ten years, they eventually decided upon the ruse of leaving behind the Wooden Horse on the plains of Troy. While most of the Trojans were given over to their short-lived rejoicings, Laocoön, whose sentiment of hatred for the Greeks was strong indeed, expressed himself in the famous words : 'Timeo Danaos et dona ferentes.' The dominant emotion of his sentiment of hatred was aroused to modify the wonder and positive self-feeling which alone his compatriots felt. Had the others shown equal consistency Troy would have been saved from disaster. At this point it may also be mentioned that Dr. Cyril Burt, author of *The Young Delinquent* and formerly psychologist to the London County Council, in discussing the causes of the temperamental defectiveness so characteristic of delinquents (by which we understand just that tendency to be carried away by the independent operation of individual instincts), refers to the lack of sentiments as an important factor. And Dr. G. W. Pailthorpe, in a more recent investigation of delinquency, finds the lack of sentiments to be a factor in 84 per cent of the cases.

(*d*) Whereas an emotion is a passing phenomenon and the emotional dispositions are innate, it should be borne in mind that a sentiment is acquired in the course of experience, and that once developed it remains a more or less permanent part of the personality concerned. At the same time, a sentiment is probably never quite static; it will either be growing in strength if the object of it is frequently encountered, or will tend to decay if the object passes from one's immediate circle. In other words, a sentiment which is a valued part of the personality cannot be expected to remain fully effective unless it is reasonably often called into operation. Darwin, for instance, in his earlier years had a lively sentiment of appreciation for poetry, but as the result of years of neglect he found in later life that it had completely decayed. The old adage that 'absence makes the heart grow fonder' has had added to it, not without reason, the words 'of someone else.' And in cases to which this witticism or cynicism does not apply the sentiment is kept active and develops either as the result of correspondence or by the frequent resort to memory and imaginative contacts with the object of the sentiment.

8. Since the development of sentiments is the first stage in the formation of character, it will readily be appreciated that the quality of the earlier sentiments formed is a matter of considerable importance. The objects of a child's early sentiments would normally be his parents, brothers, or sisters, and perhaps his teacher. If negative self-feeling, positive self-feeling, the tender emotion, and wonder are the dominant emotional dispositions of these sentiments, then the foundations of his character will be well and truly laid; for, as we shall find presently, these are the emotions on which all the highest reaches of character are based. But if fear, anger, or disgust dominates in these early sentiments (if, for instance, a child forms a sentiment of hatred for his father or his teacher), the character is almost certain to be warped from the start and can only with the greatest difficulty be corrected. The importance of this aspect is

well illustrated by reference to *The Young Delinquent.* In an exhaustive summary of the influence of environmental conditions on the occurrence of delinquency, Burt there shows that, whereas poverty (entailing hunger) has a coefficient of association with delinquency of ·15, the coefficient for 'defective family relationships' is ·33, for vicious homes ·39, and for defective discipline ·55. The fact which should be specially emphasized is that poverty, a purely *non-personal* factor, is so markedly less important than the other three, all of which involve the arousal of undesirable emotional responses and probably the formation of harmful sentiments, in connection with the immediate social circle of the delinquent.

In reference to the defective family relationships we read that, 'in case after case, the investigator cannot fail to be struck with the marked recurrence of one suggestive item—the presence of a foster-parent.'[1] Again, referring to the vicious home, it is very significant that Burt found that direct incitement by vicious parents was rare; and 'as a rule, the example is not so much directly copied, as indirectly absorbed as a disturbing element or demoralizing atmosphere. . . . *To lose respect for one's parents is to lose respect for oneself, for one's fellows, and for the whole basis of morality.*'[2] (The italics are mine.) And finally, in regard to the types of defective discipline, we read: 'Most frequent of all, and most disastrous, is the union of licence and severity within the same home, perhaps in the person of the same capricious parent.'[3] These excerpts speak for themselves and merit the most heart-searching consideration by parents and teachers.[4] Probably no reader will have any difficulty in answering the question, put at the end of paragraph 6 (*c*) of this chapter, as to the constitution of a child's sentiment for his parents and teacher; but it will require no small exercise of insight, judgment, self-control, and intelligent sympathy to ensure the desired results in individual cases.

[1] Burt, op. cit. p. 93.

[2] Ibid. p. 99.

[3] Ibid. p. 98.

[4] A terrible instance of the harmful effect of a sentiment of hatred for a step-father is given in *Psycho-analysis To-day*, edited by S. Lorand (1933), p. 354.

Suggested topic for class discussion or debate.—The emotions are merely a distracting agency which civilized man should seek to eliminate.

Books which might be consulted :

As for the previous chapter, and
W. Whately Smith, *The Measurement of Emotion.* 1922.
P. Bovet, *The Fighting Instinct.* Eng. trans. 1923.
J. J. Rousseau, *Émile.* 1762.
J. Dewey, *Democracy and Education* (1916) ; and *Interest and Effort in Education.* 1912.
J. T. McCurdy, *Psychology of Emotion.* 1925.
F. Banks, *Conduct and Ability.* 1936.
M. Phillips, *The Education of the Emotions.* 1937.

CHAPTER VI

THE SELF-SENTIMENT

Self-reverence, self-knowledge, self-control,
These three alone lead life to sovereign power.

1. From the time that a child begins to discriminate particular objects of his experience (the first, in normal circumstances, being his mother), he also begins in a rudimentary way to form some of the general sentiments described in the previous chapter; i.e. as different objects are distinguished and encountered with some frequency, so they become definitely linked with a more or less stabilized group of emotional tendencies. It is, as it were, the formation of a habitual relationship in the emotional sphere, and Dewey frequently uses the word 'habit' for a sentiment as above described.

Now, among the objects of a child's experience, late in being clearly discriminated, it is true, but before long assuming a position of paramount importance, is his own self; and usually between the seventh and tenth years (though in this, as in other respects, children vary greatly) there begins to take definite shape a self-sentiment. For most of us the self remains through life an object of direct and constant concern (though this need not imply 'selfishness' as generally understood); consequently this sentiment is frequently called into operation, and hence steadily increases in power until it becomes a dominant influence in determining our behaviour, for good or ill, according to its constitution.

2. The emotional dispositions which form this sentiment are positive self-feeling, negative self-feeling (for obviously these imply the urge to assert the *self*, and the will to subordinate the *self* on the perception of superiority); next is the emotion of the gregarious instinct (since it is the self which is perceived as separated or different from the herd); also are included anger, since the self is often crossed, fear,

possibly wonder, and, in some cases, tender emotion. This last, however, splendid urge as it is in almost every other connection, is a somewhat dangerous element here, since its inclusion would render us liable to what someone has called 'the devastating force of self-pity.' Even without the tender emotion, however, we have here a very powerful group of emotional dispositions. But a healthy, desirable self-sentiment depends primarily upon the full development of positive and negative self-feeling within the sentiment, and above all on the maintenance of a just balance between them. If negative self-feeling is very weak, we have the insufferable egotist, so full of his own importance and worth that he has neither genuine respect nor reverence for any one else; when any of his plans miscarry, he declares vehemently that 'some fool has blundered'; suggestions and advice generally have the effect of inducing him to take the opposite course; and criticism, however tactful and constructive, merely arouses resentment. Opposition to him is always mere stubbornness; and because he thinks a thing, it is so, though if you are sufficiently 'pig-headed' you may think otherwise.

On the other hand, if positive self-feeling is very weak, we have the spineless individual, who has no initiative, no independence either of thought or action, who will never take any responsibility, never has an opinion of his own, and is ready, like the man in the fable, to carry his ass in deference to the passing and uninformed criticism of every fellow-wayfarer. There is, of course, no case of the complete absence of either positive or negative self-feeling outside of a mental hospital; but most of us tend somewhat in one direction or the other, and readers will have no difficulty in calling to mind, amongst their acquaintances, some few persons showing bias towards one extreme or the other in very marked degree. It is difficult to say which gives the more unsatisfactory type of personality; to a considerable extent this depends upon the kind of situation in which the individual in question is placed; but in all circumstances any marked deviation from the balance must be a serious handicap both from the point of view of individual happiness and that of social effectiveness. It is of interest to note in this connection that there is a form of definite mental derangement known as manic-depressive insanity, in which we find positive and negative self-feeling alternating, instead of operating in conjunction. Hence, instead of the balanced personality which results from the co-operation, the complementary interaction between these two emotional dispositions, we find an unfortunate who alternates between the depths of self-humiliation and an equally pitiable state of unlimited arrogance.

3. On the other hand if we have strength and balance of these two emotional dispositions within the self-sentiment, the former gives initiative, confidence, forcefulness, and a willingness to shoulder responsibilities and undertake reasonable risks in the pursuit of our own or communal activities ; the latter gives a wholesome diffidence, a willingness to admit errors and to seek a better adjustment by listening to the advice of those recognized as leaders in any particular sphere. In short this balance produces that ready recognition of one's own powers and limitations which constitutes a reasonable belief in oneself or one's *self-respect*.

4. Since this balance is so far-reaching in its consequences, it behoves all who form the immediate social circle of children (especially parents and teachers) to do all that they can to promote its attainment ; to take note of individuals in whom either positive or negative self-feeling is weak and by seeking opportunities to bring these emotions into play to strengthen them when necessary.

(*a*) The detailed manner in which this may be accomplished will naturally vary in individual cases and circumstances, and a facility in turning these to the best advantage is one of the marks of the really discerning and effective teacher. Yet the following general suggestions for the inculcation of positive self-feeling may be offered :

(i) No effort should be spared to adjust to his capacity the demands made on a child whose tendency is towards too much negative self-feeling. This does not mean, merely, to make the work easy ; for if it is too easy there will be no challenge in it, and consequently little or no positive self-feeling will be aroused ; in fact, if the work is made obviously easier for him than for others, the effect will be exactly the opposite of what is desired—a thwarting of positive self-feeling. It will be appreciated that to get the work *just* within the child's capacity calls for no small skill and judgment on the teacher's part. It may be objected that under existing conditions of class teaching there are many occasions on which the children must all be set the same work and therefore such adjustment is impracticable. In so far as this is really the case, it is simply an indication that 'existing conditions of class teaching' are in need of modification. But as a matter of fact it is not always so impracticable as it might at first sight appear. For example, suppose that in arithmetic we have carefully developed some general principle and have assured ourselves by oral work that the principle has been grasped ; we now wish to set some written examples. Naturally sufficient examples will be set to keep the better pupils busy for the period, but the essential point is that the examples shall be carefully graded. At the end will be one or two difficult examples intended (not explicitly, of course) for the 'high-fliers'; to them they will form a suitable challenge, and other children, less able and therefore slower, will find their match in the less difficult examples which precede. Further, while the children are engaged in wrestling with the examples, the skilful teacher can always assist where necessary, *and without appearing to do so*, by well-directed *questions* ; questions which unobtrusively suggest the necessary line of thought, and which, when answered, leave the child with the sense of having breasted the hill himself, or more precisely with an experience of positive self-feeling. In oral work, of course, the situation is much easier, for oral questions may vary greatly in difficulty without the children being conscious of the difference or of the fact that the teacher is *not* putting them to the various members of the class at random.

(ii) Again, children in whom positive self-feeling is weak may be assisted towards adjustment by being given small responsibilities about the classroom and in the management of the class affairs. For example, if a small collection, of perhaps a penny from each child, is being made, it will be necessary to have a list and to check off as the children bring the money, but an opportunity is wasted if this work is given to the top boy to attend to. And the same applies when an important message is to be sent, or material of importance is to be distributed or collected ; and so on.

(iii) A further and more obvious method is to make full use of a child's strong points ; for there are few children in an ordinary school who have not a special gift in some direction, e.g. music, manual work, or art. In this connection, the classroom performance of suitable plays will at once suggest itself as a field for the display of such special gifts, in the preparation of simple scenery or costume. And it will be obvious that the active participation in such plays or classroom debates presents other possibilities of arousing positive self-feeling ; for instance, the students of the college to which the writer is attached present several plays each year, and as far as possible it is arranged (entirely by the students themselves) that every member of the college shall take part in one play or another. On more than one occasion the lecturers have been astounded by the display of quite unexpected talent in a student who had been regarded as sadly lacking in positive self-feeling.

(*b*) In regard to the inculcation of negative self-feeling, a warning is necessary at the outset. Children in whom this emotional disposition is weak naturally give the impression of being over-assertive and 'pushing,' and we are strongly tempted into the idea that they need 'putting into their place' or 'squashing,' but it is important to remember that thwarted positive self-feeling is not negative self-feeling ; and that strong positive self-feeling will be a great advantage if we can inculcate negative self-feeling to match it. Granted that some sacrifice of positive self-feeling may be necessary in the effort to bring about a balance, yet let it not be forgotten that our main endeavour in these cases should be the direct inculcation of negative self-feeling. The lines along which this may be done have, as a matter of fact, already been referred to ; they will simply be briefly summarized here :

(i) If parents and teachers are all that they should be to the child, the sentiments which he forms for them, as referred to at the end of the previous chapter, will include negative self-feeling as a dominant factor and this will lay an essential foundation.

(ii) In literature, history, and geography teaching, negative self-feeling (as the chief element in the compound emotions of admiration and reverence) will be strongly aroused by the operation of primitive sympathy (as explained in Chapter Five) during the presentation of examples of noble human behaviour in many fields.

(iii) Similarly, negative self-feeling may be strongly aroused by the presentation of grandeur and beauty in nature, art, music, or architecture. The Gothic style is itself an expression of aspiration (i.e. negative self-feeling plus positive self-feeling) and will arouse that emotion directly, to some extent, by the operation of primitive sympathy.

Throughout the foregoing discussion the school has been kept chiefly in mind, but the same principles apply *mutatis mutandis* to the home. In some ways the narrower circle is productive of keener rivalries and deeper admirations, and therefore is the more effective scene of the development of this all-important factor—self-respect.

The Idea of Self

5. The description of the self-sentiment up to this point will have indicated something of its importance, but, in order to understand fully its powerful and all-pervading influence in the control of behaviour, it is necessary to know something of the way in which the *idea of self* develops.

Try to imagine a person who has the same control over his whole environment as he has over the movements of his own limbs. As an aid in this endeavour try to imagine what perception, if any, a fish has of water ; or consider the fact that we, although enveloped and interpenetrated by ether, have no perception of it ; nor have we any perception of atmospheric pressure. That which is universal and uniform escapes notice. A little thought along these lines will show that a person with complete control of his environment would not discriminate between the self and the not-self. That fundamental cleavage in the totality of a child's experience is brought about in the first place because he finds that some parts of his environment work independently of his wishes and sometimes oppose them ; it is these parts, i.e. the not-self, of which he first becomes vividly aware, and it is only by contrast with these that he gets his first vague idea of the self—that part of his environment which responds to his wishes, his body.

6. Before this vague idea of self has taken on any definiteness, while it is still entirely nebulous by contrast with his vivid awareness of a bright light which is out of his reach or of his bottle which he cannot have, persons come to play a dominant role in his not-self. This is so because (*a*) they are moving objects and therefore attract his attention more often than stationary ones, (*b*) they supply his wants, and (*c*) they are frequently the occasion of the most acute forms of opposition to his wishes ; e.g. some object, the handling of which he is thoroughly enjoying, is taken away from him (perhaps it is dangerous ; but how should he know that ?) ; or he is removed from some fascinating occupation such as splashing about in a nice warm bath to be put to bed. In either case, the person responsible becomes a very prominent feature, for the time being, in his not-self. As a result, therefore, of this differentiation of the not-self (the emergence of persons) there comes a little more definiteness in his idea of self—a person among persons.

7. The next important differentiation of the not-self lies in the fact that, whereas previously persons were the child's chief interest, gradually the emotions of those persons become his dominant concern. The explanation of this is as follows. We saw previously that a child's first meanings are activities ; also that he always describes the objects of his experience in emotional terms, and comes quite unreflectingly to regard the emotions as the motive forces of behaviour.

In this connection reference may be made to Greig's *Language at Work*,[1] p. 20, where he draws attention to the very early age at which children unconsciously produce and interpret those finer variations of intonation (the 'tunes of speech' as Greig aptly calls them) which indicate varying shades of emotional attitude in the speaker. It is not surprising therefore that the emotions of those about him become his paramount concern; for he constantly seeks to play upon those emotions for his own advantage. A child, for instance, is very quick to realize it, if any of his little ways or sayings elicit the admiration or the tender emotion of his parents, and he is not slow to repeat these performances when some favour is desired; or he may make much of some small ill or hurt if he has found that in that way he can arouse the tender emotion of his parents and perhaps gain some small reward to soothe him.

As a result of this new differentiation of the not-self (the great interest in the emotions of those about him), we find that the child's idea of self is more and more influenced by the expression of those emotions, in approval or disapproval, concerning himself. It is a commonplace that if we frequently call him a little angel, who can do no wrong, he tends to become a little prig; and similarly if his praises are sung, in his own hearing, to other people. I recollect an instance concerning a small boy of nine years; visitors to his mother were in the drawing-room when he arrived home from school, and thither he presently betook himself. It was natural that one of the visitors should make some inquiry about his schooling, but, as his mother began on this topic, he said to the other visitor: 'Now you are going to hear about my mathematics.' Clearly this child's idea of self had been markedly affected by his mother's pride.

On the other hand, frequently call a child a 'naughty boy' who can do nothing right, and he will just as surely tend to adopt that view of himself.[2] In short, during these early years, the child's idea of himself is in no small measure a reflection of the expressions of approval and disapproval of his immediate social circle. At the same time and in the same way, the social sanctions which are brought to bear on a child, being the collective expression of the approval and disapproval of the group, also tend to influence his idea of himself. In Sparta, as in Fagin's small fraternity, stealing, so long as it was adroit stealing, met with entire social approval; and consequently a boy growing up in either community would most likely include, as part of his idea of self, the skilful thief. Moreover, because these social sanctions often operate as a check on the wishes of the child, they tend to produce a still further differentiation in his idea of self; he realizes himself as a member of the group.

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[1] University of Witwatersrand Press (1944).

[2] The case of Maggie Tulliver's girlhood comes strongly to mind.

8. To sum up: all along the line the idea of self develops mainly through the child's reactions to his social circle; or in other words, the idea of self is very largely the product of social influences. As a result, when the self-sentiment is formed, having a centre so developed, it is exceedingly sensitive to social approval and disapproval. Hence it is that there are few individuals who can face the disapproval of their social circle, and fewer still who can resist the temptation to seek the approval of their social circle as a good in itself. And there is no doubt that, up to a certain point, this sensitiveness to social approval and disapproval plays a very salutary part in the control of behaviour; it is the main factor, for practically all children and for the majority of adults, in promoting moral and desirable behaviour and in preventing antisocial behaviour. Some, in fact, would have us believe that the fear of social disapproval (and punishment) is the *only* factor, in the case of *all* men, preventing them from following their primitive instinctive urges.

We shall take up this question in the next chapter. Before closing this one, we may note again, from a slightly different angle, the great importance of the balance between positive and negative self-feeling in the self-sentiment. For the relative weakness of negative self-feeling renders a person correspondingly indifferent to social approval and disapproval; neither the praise nor the blame of the common herd is worthy of his consideration. Thus while positive self-feeling gives strength and initiative to behaviour, negative self-feeling gives sensitiveness to social direction.

Suggested topic for class discussion or debate.—The preservation of self-respect is so important for the development of a healthy personality that it is never wise to promote in children a sense of guilt and shame.

Books which might be consulted:

Cyril Burt, *The Young Delinquent.* 1925.
Homer Lane, *Talks to Parents and Teachers.* 1928.
A. S. Neill, *The Problem Child.* 1926 ; 4th ed. 1934.
W. Clarke Hall, *Children's Courts.* 1926.
W. H. Burnham, *The Wholesome Personality.* 1932.
L. P. Jacks, *The Education of the Whole Man.* 1931.
John Locke, *Some Thoughts concerning Education.* 1693.
Alfred Adler, *The Education of Children.* Eng. trans. 1930.
Havelock Ellis, *Psychology of Sex.* Abridged ed. 1933.
A. G. and E. H. Hughes, *Learning and Teaching.* 1937.
M. Milner, *The Human Problem in Schools.* 1939.
C. A. Claremont, *The Innumerable Instincts of Man.* 1940.
P. M. Symonds, *The Psychology of Parent Child Relationships.* 1939.

CHAPTER VII

LEVELS OF BEHAVIOUR

> . . . Men may rise on stepping-stones
> Of their dead selves to higher things.

1. Reviewing the ground so far covered in our endeavour to gain a comprehensive view of the motive forces of behaviour, we may discern three levels fairly clearly defined, though naturally there is no absolute separation of successive stages ; and not only does one level gradually merge into the next, but also any given individual's behaviour is not necessarily always on the same level ; it may be generally on one level, but may rise to a higher one or fall to a lower one on particular occasions.

(*a*) At the first level, primary emotions, unmodified by integration with other emotional dispositions, actuate behaviour from moment to moment ; or, in other words, single instincts operate independently. This level is typical of animals and of very young children. A grown-up person whose behaviour has any marked tendency in this direction is fittingly described as volatile ; or behaviour of this type displayed on any particular occasion is often described as an outburst of 'elemental passions'—a phrase, be it noted, which approaches very nearly the more sober psychological term used above, 'primary emotions.'

(*b*) At the second level, which is typical of children, sentiments are formed, the centres being usually parents, brothers and sisters, teachers, friends and animal pets, with the possible inclusion of special toys. The formation of these sentiments is the first step in the integration of the emotional forces, which brings about, as we saw, some modification of simple instinctive urges and some degree of consistency in behaviour.

(*c*) The third level is that at which we find the great majority of adolescents and adults. It is marked by the formation of the self-sentiment, which not only exerts a powerful controlling influence on behaviour *directly*, as in the case of the other sentiments, but, even more important, which operates as a further integrating factor, a connecting link between the many and varied sentiments which have been formed by this time, so that even these no longer operate independently in actuating our behaviour. The explanation of this further integration may be outlined as follows.

2. Though the idea of self includes originally only the body of the child, it is soon extended to include his peculiar possessions, his toys, his clothes, his home, and his books ; if these are praised he swells with satisfaction, and contrariwise he feels hurt if they are disparaged. In a similar way his idea of self also includes his immediate family circle and more intimate friends ; if any one of these is disparaged, he again feels that the attack is to some extent upon himself. At a later stage, and by the time his self-sentiment is well formed, the adolescent or adult includes, in his idea of self, his pretensions. If these pretensions are impugned, he feels that he himself is attacked, so much have they become a part of himself. For instance, if any one said that I was a very poor legal adviser, I should not be disturbed in the least, since ability at law is not one of my pretensions ; but let any one say that I am a very poor teacher and I should be deeply wounded at once, since I do pretend to some ability in that direction. Or, again, if any one cast reflections on my taste for poetry, I should feel distinctly aggrieved, but similar reflections on my taste in neckties would make little or no impression on my feelings. It will be observed that my idea of self has been extended to include, very strongly, ability in my profession, less strongly, but still quite definitely, a taste for poetry, and only very weakly, a taste for dress.

Now all such peculiar personal possessions, relatives, friends, and pretensions imply the existence of sentiments ; and since the centres of these sentiments are more or less closely identified with the self, it is only natural that the sentiments should be to some extent integrated, or linked up, with the self-sentiment, and receive support from this source, should occasion require it. This means that, if a man's family or his friend or his profession is attacked, he rises to the defence, actuated not only by his sentiment for his family, his friend, or his profession, but also by his self-sentiment.[1] Thus, although the emotions remain throughout the ultimate driving forces, the three levels are marked by a gradually increasing degree of integration of these forces.

3. Viewing these levels of behaviour now, rather from the objective than from the subjective standpoint, we find that the external controls chiefly operative, at each level, in determining whether a particular line of activity shall be persisted in, or abandoned, are also characteristic.

(*a*) Thus at the first level the factor chiefly operative is success and failure. This has been brought out clearly in all experiments on the ability of animals to profit by experience. One such (the pike experiment) has already been mentioned ; another oft-quoted example is that of Thorndike, on cats. In this case, a hungry cat was shut up in a cage, with food within sight just outside the cage. The exit from the cage was through a door opened by means of a catch. At first the cat made simply random movements, clawing at the bars and paying no particular attention to the door and still less to the catch ; in the course of these movements it eventually released the catch accidentally. On being put again into the cage, the same general train of events was repeated, but after a number of repetitions the random movements were more and more reduced, more attention being paid to the door and to the catch, until ultimately the necessary movement for opening the door was made directly. Failure of the random movements of clawing at the bars gradually caused these to be eliminated while the success attending the particular movement which released the catch tended, to use Thorndike's phrase, to 'stamp in' the particular neural pathway traversed by the nerve impulses involved in this particular movement.[1] Note that the whole train of activities was actuated throughout by the emotional urge of a single instinct—that of feeding ; success and failure operated to effect the selection of the particular line of activity by which this instinct could most quickly attain to its end-activity. (Intelligence would be measured inversely in terms of the number of repetitions necessary to effect this selection.)

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[1] 'There were some Dodsons less like the family than others—that was admitted; but in so far as they were "kin" they were of necessity better than those who were "no kin." And it is remarkable that while no individual Dodson was satisfied with any other individual Dodson, each was satisfied not only with him or her self, but with the Dodsons collectively.'—*The Mill on the Floss*, Bk. I, Chap. VI.

(*b*) At the second level, success and failure continue to play an important part in this selection ; for example, if a child snatches at desired objects or cries for them, it is certainly the part of wisdom to ensure that these activities fail to achieve their object, and that asking is successful. James, in his treatment of this particular point (*Talks to Teachers*, p. 41), postulates, as part of the learning process, punishment for the undesirable reaction (snatch—smack) ; but *persistent* failure of the wrong reaction is all that is necessary to ensure its abandonment. This indeed is the basis of the dictum that, as far as possible, the punishment should appear as the natural consequence of the offence. But at this level social approval and disapproval will begin to play an equally important part ; we should let the child know that crying for things or snatching them are ' not done,' and at the same time direct his attention in approving tones to the way in which older children (or, in their absence, adults) *ask* politely for what they want.

(*c*) At the third level, i.e. when the self-sentiment is well developed, success and failure and crude punishments operate to a less extent, and social approval and disapproval, to which the self-sentiment (as we saw in Chapter Six) is highly sensitive, become the most important external controls of behaviour. At this level, also, and to some extent at the second level, an ever-increasing appeal should be made for the exercise of intelligence in the selection of the particular line of activity it is desired to establish. This aspect will be developed further in Chapter Ten, dealing with the learning process and thought ; and in any case the intelligence plays an important part at the next, the fourth, level.

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[1] Just how the *subsequent* event, success, could affect the neural pathway traversed has remained obscure.

The Fourth Level of Behaviour

4. Doubtless many readers will have felt that the three levels of behaviour, as described up to this point, do not fully cover the ground. In particular, many will have felt, while the great importance ascribed to social approval and disapproval is no doubt the truth and nothing but the truth, it is certainly not the *whole truth*. They will have thought of some outstanding cases of behaviour which subsequent events and the judgment of posterity have declared to be most eminently right, but which at the time of their performance met with the strongest social disapproval. Some readers will have felt that, in their own behaviour at its best, they have steeled themselves to be indifferent to praise or blame.

All this is entirely as it should be ; for, while nothing need be retracted of what has been said of the importance and value of social approval and disapproval in the control of behaviour, they certainly have very definite limitations. In the first place, if I am actuated in my behaviour entirely by a regard for social approval and disapproval, if I am seeking the pleasure of such approval or trying to avoid the pain of such disapproval, then my behaviour is entirely egoistic and non-moral. It may be objected that this is of no consequence so long as the behaviour is right ; but this objection omits to take into account the fact that if my motive is purely as stated above, I shall refrain from acts that would meet with social disapproval only if there is a possibility of being found out ; and I shall perform acts which are calculated to meet with social approval only when there is a likelihood of my social circle, or some member of it, becoming aware of my action. In short, my following of the right course will be very sporadic and uncertain.

5. An even more serious limitation of social approval and disapproval lies in the fact that public opinion and social sanctions vary very much with time and place ; consequently

we have very many anomalies and absurdities which naturally tend very seriously to weaken the force of these social sanctions. For example, during the 1914–18 War it was a common experience to find young men who had been brought up in a family and village circle with a great respect for the social disapproval of laxity in sexual matters, yet who, on finding a markedly different set of social sanctions in barracks, gradually weakened in their regard for the home standards. And, moreover, the weakening of one such social sanction tends also to impair the force of other sanctions having the same origin.

Further, there are at the present time two general factors tending to expedite and to accentuate this process of the breakdown of the force of social sanctions :

(*a*) The progress of civilization, generally, by freeing people from some of the cruder forms of superstition, removes some of the mysterious fears of the consequences of disregard of social sanctions, thereby weakening their power. The threat of *eternal* damnation for finite wrong-doing in this life, which has been used in some circles to check wrong-doing, is one case in point. One may also contrast, in this connection, the rigidity of social sanctions amongst the primitive tribal natives of Africa, still in the thrall of witch-doctors and *mtagati*, with the disregard of those same social sanctions amongst the urbanized natives.

(*b*) The enormous increase in the facilities for communications and transport is a special case of the above, of such importance as to warrant separate mention. These facilities have broken down the comparative isolation of communities in different parts of the world ; and added to these, there is the ubiquitous cinema and the almost universal ability (amongst western peoples) to read, both greatly tending to increase our knowledge, not only of our contemporaries in China and Peru, but also of our own forbears. The total effect is to throw into much stronger relief the anomalies and absurdities to be observed amongst human customs and beliefs, and thus to weaken their force.

This weakening of social approval and disapproval in their influence on behaviour means that the individual, amongst western peoples at least, tends, to a steadily increasing degree, to disregard the social sanctions of his fathers.[1] That this is a distinct tendency of the present time few would doubt. In one sense it is, of course, a matter for apprehension, for in disregarding these social sanctions, the individual may fall beneath the standards set by them; in another sense it is a matter for congratulation, for until he is freed from dependence on these social sanctions he cannot rise above them, guiding his behaviour in the light of personal moral judgment; in other words, he cannot rise to the fourth level of behaviour.

6. Since the new factor, which makes possible the rise to the fourth level, is the emergence of the moral judgments, and since these have long been a matter for dispute, it will be well to inquire briefly into their nature and development. On the one hand a moral judgment, as a factor influencing one in the direction of right conduct, has been held to be essentially a matter of intellectual discrimination between the moral action and the immoral, between what is socially valuable and what is antisocial (these not necessarily coinciding with what is socially approved or disapproved). Especially, it is held that intellectual discrimination is necessary as to the finer shades of distinction. There is, for instance, no difficulty in discriminating between courage and cowardice, between generosity and greed, or between loyalty and treason, but it may be difficult to discriminate between courage and bravado, between generosity and quixotic folly, or between patriotism and racial prejudice. Was it courage or foolhardiness which Nelson displayed in putting his telescope to his blind eye and ignoring the orders of his superior officers? Would we give the same answer if the event had turned out differently? There is a story told of the Buddha that, in one of his previous incarnations, he encountered in the jungle a tigress with two cubs, all obviously famishing—there having been a prolonged and terrible drought in the land. Instead of making a safe

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[1] For an exceedingly cogent presentation of this inexorable tendency of to-day the reader is recommended to *A Preface to Morals* by Walter Lippmann.

retreat, he stepped forth with the words: 'Ho, mother, here is meat for thee.' Was this generosity and compassion or quixotic folly?

The point at issue, of course, is not whether we should decide one way or the other in the above examples, but whether, having made a clear intellectual discrimination as to the right course, we should be impelled thereby to take that course if placed in a similar situation. Is the ability to judge correctly in such cases as these the *essential* factor in effective moral judgment as a guide to conduct? Socrates held that it was so; he taught that 'knowledge is virtue'—that a clear and unequivocal knowledge of the right course would lead a man assuredly to adopt that course. Herbart also, the great German psychologist of the nineteenth century, whose name is familiar to teachers in connection with the 'Herbartian steps,' also held this view, as is shown by his constant emphasis on the importance of the presentation of right ideas to children and his conception of idea-force. Among modern psychologists Spearman also seems to adopt this view. Writing of the defence of a child by the mother, he declares that the 'whole proceeding is not orectic at all but *cognitive*' (his italics).[1] Yet he has, a few lines above, spoken of 'a menace to the *desired* welfare of the child' (italics mine). Surely 'desired' indicates unmistakably the operation of a prior urge (i.e. the parental instinct).

Certainly the verdict of common experience is against the view that such proceedings are purely cognitive; we are constantly meeting cases in which a person apparently knows perfectly well what is the right course to pursue in a given situation and yet unfortunately adopts a different line of conduct: how often we 'know the better but pursue the worse.' An illustration on a large scale is given in *Studies in the Organisation of Character* by Hartshorne and May (1928–30). Three hundred and forty-one children, faced with the proposition, 'If another pupil wants to copy your work and hand it in,' were required to select what they considered to be the correct response, from five possible responses offered; 238 of the children selected: 'Don't let him, and tell him you don't approve of cheating.' Yet of these 238, no less than 66 per cent, when subjected to a cheating test, succumbed to the temptation. Similarly, when faced with the proposition, 'If a storekeeper gives you too much change,' 322 gave as the correct response : 'Tell him he made a mistake' ; yet of these 63 per cent cheated when opportunity offered !

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[1] *Psychology down the Ages,* Vol. II, p. 148.

What then is lacking in these cases where a clear knowledge of the right course does not ensure right action? Contrast the dilettante who perceives the beauty of the Christian ideal of self-sacrifice, but fails to direct his own life in accordance therewith, with the martyr who is prepared, if necessary, to die for it. What is the difference? It is surely that the latter not only knows, but also *feels* the Christian ideal. Westermarck has developed this aspect fully in his book on moral judgments,[1] and shows that ultimately every *effective* moral judgment is based on a correct *emotional* response to a given situation. We must genuinely *appreciate* honesty for its own sake, or self-sacrifice, or compassion for animals, in order that we may be unfailingly honest in word and deed, or always selfless in our conduct towards our fellow-men, or compassionate towards animals. This view, as developed by Westermarck, is of course entirely in accord with the general principle of the Hormic psychology, that the emotions are always the mainsprings of behaviour, whether good or bad. Without the genuine emotional response the moral judgment is hollow —perhaps even hypocrisy. In deference, however, to the Socratic view that 'knowledge is virtue,' it should be clearly apprehended that the emotional response and the intellectual response to a given situation are not two distinct mental activities, but rather are two aspects of one mental activity, and that the two aspects are interdependent. This is implied when we speak of *appreciating* self-sacrifice or honesty for its own sake ; the fullness and high quality of the emotional aspect is to some extent dependent on a clear intellectual perception of all the factors of the situation in which the self-sacrifice or honesty is displayed.

7. While it is true that the effectiveness of a moral judg-

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[1] *The Origin and Development of the Moral Ideas*, 1906 ; 2nd ed. 1912.

ment is dependent on the arousal of the correct emotional response in connection therewith, that we must see and feel the right course in reference to a definite and concrete situation, it must also be clearly recognized that none of us could originate, out of our own immediate experience in youth, many such moral judgments to serve as our guides on the fourth level of behaviour ; much less could any one develop independently and *de novo* out of his own life-experience a harmonious system of such judgments. For the most part we must take them over as part of our social heritage, as embodied in our language, literature, history, societies, monuments, and institutions. But even when they are taken over in this way, it is still essential that, in order to be effective, a definite and vivid reflection of the original emotions, upon which the judgment is based, should be aroused in the recipient. This then is an essential part of a teacher's work if he seeks to help his pupils to rise to the fourth level of behaviour. How can he transmit these moral judgments so that the appropriate emotional response is aroused ?

(*a*) He must first have won at least the respect and, if possible, the admiration of his pupils. If the sentiments which they have formed for him are of varying shades of antipathy, these emotions are very liable to be aroused not only by the subjects which he teaches, but by any moral judgments which he may endeavour to transmit ; he is liable to arouse aversion where he is seeking to create appreciation ; and the more zealously he may seek to do the latter, without having first won the respect or admiration of his pupils, the more harm he is likely to do. This clearly is a case of : ' If I speak with the tongues of men and of angels but have not love, I am become sounding brass, or a clanging cymbal '—or rather worse than that.

(*b*) He must himself set a good example of behaviour, directed by moral judgments when occasions arise, without being forced, in ordinary classroom procedure. Such occasions are necessarily somewhat rare ; but they are all the more important since they are the principal means by which (i) he can prove his sincerity and earn that respect referred to above, and (ii) he can show that all moral judgments arise out of real experience and serve as guides to conduct—that they are not mere words.

(*c*) Naturally, most of the moral judgments will be developed in connection with the literature and history teaching as indicated in Chapter Five, and the emotional response will be aroused sympathetically as there explained. In this connection it may be emphasized that direct moral instruction, involving the exposition of moral judgments in a generalized and abstract form, can cut very little ice. It will be well to remember that He whom western peoples regard as the greatest of all teachers, when He wished to present some moral judgment, almost invariably did so either by making use of actual situations as they arose from day to day, or by means of parables representing concrete and homely situations, which His hearers could readily comprehend, and through the narration of which He could easily arouse the required emotional response. 'They mould their souls by the tales they tell.' Even the Sermon on the Mount, which is full of moral judgments, is illuminated at every point with telling and familiar illustrations.

A moral judgment so presented is made effective as a guide to behaviour by becoming the centre of emotional dispositions; or, in other words, is transformed, for the person who experiences these emotions in connection with the moral judgment, into a moral sentiment. The primary emotions forming such sentiments are very largely negative self-feeling and wonder, but there may be also a tinge of fear, if awe or reverence has been aroused in the presentation of the matter.

Note that a moral judgment is impersonal and objective; e.g. it may be stated in a book. A moral sentiment implies definite reference to the mental life and experience of a particular person; is a factor in a particular personality. Persons who 'know the better but pursue the worse' may be said to be acquainted with certain moral judgments, but they have not formed the corresponding moral sentiments. It is also worthy of note that it is in the formation and subsequent operation of these moral sentiments that we have the closest and most important synthesis of emotional and intellectual factors. As was pointed out above, while the intellectual perception of the right course is not the essential factor in a moral judgment (and hence, a moral sentiment), it is certainly an important factor. Thus the intellect, whose principal role, in any case, is the control and direction of behaviour, is here combined with a grouping of emotional forces, especially negative self-feeling, the urge of which is to follow a lead.

Suggested topic for class discussion or debate.—Defiance of public opinion and social sanctions is a necessary stage in the development of character.

Books which might be consulted :

W. McDougall, as for Chapter Four.
W. Lippmann, *A Preface to Morals.* 1929.
E. A. Westermarck, *The Origin and Development of the Moral Ideas.* 1906; 2nd ed. 1912.
D. Kennedy Fraser, *The Psychology of Education.* 1923.
J. A. Hadfield, *Psychology and Morals.* 1923; 6th ed. 1935.
R. S. Stebbing, *Ideals and Illusions.* 1941.
A. G. and E. H. Hughes, *Learning and Teaching.* 1937.

CHAPTER VIII

CHARACTER AND WILL

To thine own self be true,

. . . .

Thou canst not then be false to any man.

1. Moral sentiments, when once they have been developed in the experience of an individual, as described in the foregoing chapter, become for him directing forces in his behaviour. But one may easily imagine cases in which such moral sentiments are pitted against powerful primary emotions, or even against powerful sentiments. By way of illustration one may mention the famous incident in which Sir Philip Sidney, when grievously wounded, handed over a proffered drink of water to a humble but dying comrade in arms, saying: 'Thy need is greater than mine.' The directing force in this case would be a sentiment for self-sacrifice, but there would obviously be very powerful primary emotional urges opposed to the line of action indicated by this sentiment. Or consider a situation which must have occurred frequently during the Great War, presenting in a way even greater difficulty for the person concerned. A soldier whom we may suppose to have enlisted in the first place actuated by a moral sentiment for duty to his fellow-countrymen, has been wounded and sent down to a base hospital. On his recovery he realizes that his is a border-line case, that he is probably just fit enough to return to the trenches, but that unless he shows buoyancy and vigour before the medical board he will quite possibly be drafted out as unfit. His original sentiment for duty to his fellows prompts him to make the necessary effort to return to the front; but actuating him in the opposite direction are, possibly, powerful sentiments for his wife and children and his business, not to mention fear and disgust aroused by the memory of conditions at the front. Even social approval would probably be on the wrong

side, for his comrades, if they realize the situation, would most likely advise him to 'get out and not be a fool.' Yet, despite this powerful array of emotional forces, when the critical moment arrives he makes the necessary effort and returns with what cheerfulness he can muster to the horrors of the war. How comes it that a relatively weak moral sentiment for duty, probably, in itself, comprising only the emotional dispositions of negative self-feeling and wonder, and possibly dating back to an occasion in his adolescence when, shall we say, he was inspired by Poynter's picture 'Faithful unto Death,' how comes it that this sentiment is able to prevail in directing his behaviour, notwithstanding the powerful sentiments and primary emotions arrayed against it?

2. Probably the answer which would be offered by the majority to this question is that the man exerted his 'will.' But what is his will? Here we touch upon another age-long battle, that between the Libertarians and the Determinists; the former maintaining the existence in man of a special force, the will, which he is able to call into play in such difficult situations as that depicted above; the latter proclaiming that the belief in free-will is a pure illusion, that our behaviour is entirely pre-determined. In these circumstances it will be better, in giving an explanation of such behaviour, to endeavour to account for the effectiveness of a moral sentiment in directing our behaviour, despite powerful opposition, without making use of the term 'will' at all. In the course of the discussion we may find a useful meaning to give to the term.

3. The secret of the force which enables these relatively weak moral sentiments to prevail in guiding our conduct lies in the fact that they are made part and parcel of one's idea of self, they are made definitely a part of one's pretensions, and are thus closely bound up with the self-sentiment. Hence, if the moral sentiment is threatened, we feel that we ourselves are in danger of failing, and consequently the moral sentiment receives the whole emotional backing of the self-sentiment, which, it will be remembered, is easily the most powerful of all the sentiments, chiefly on account of the frequency, almost con-

stancy, with which it is called into operation. A moral sentiment thus adopted as a part of one's idea of self is properly spoken of as an *ideal*. It is true that we frequently hear of ideals as expressed in a book or paper, but they are, strictly speaking, ideals only for those by whom they have been definitely integrated with the idea of self; for others they may be moral sentiments or merely moral judgments without emotional backing at all.

4. Thus it will be seen that the full ascent to the fourth level of behaviour is again characterized by a further degree of the integration of emotional forces. At the second level, we had the first stages of such integration in the formation of simple sentiments; at the third level, a further degree of integration in the definite formation of the self-sentiment, and in the linking of personal sentiments and sentiments for particular possessions with the self-sentiment. Finally, at the fourth level we find the formation of moral sentiments (each one a synthesis of emotional and intellectual factors) and the close integration of these also with the self-sentiment; so that we have, as it were, a thoroughly organized hierarchy, with the self-sentiment dominating the whole and providing the essential integrating force holding the various separate sentiments correlated within the hierarchy. It is this whole hierarchy of sentiments, organized about, and dominated by, the self-sentiment, which constitutes a person's character as described in psychological terms.

We are now in a position to understand with much more precision what is implied in our ultimate aim, the development of character; in brief, it means the promotion of that progressive integration as described in the previous paragraph, beginning with the formation of simple sentiments of love and respect for parents and friends, and ending with the completely organized hierarchy of sentiments. Also, we are able to appreciate fully the enormous importance of maintaining the self-respect. (How often we hear something to this effect: 'Poor fellow, he has lost his self-respect and gone to the dogs completely.') For the self-respect, that balanced condition of the self-sentiment, we now find to be the very heart and core of the character.

Without it the whole hierarchy must simply disintegrate and collapse: isolated moral sentiments may remain intact and may be displayed sporadically in action; if so, we have the sentimentalist, for there is no organized emotional force to carry them into action on those occasions when resistance is encountered from primary emotions or personal sentiments. In this connection it may be recorded that Dr. Burt, Mr. A. S. Neill, Homer Lane, and in fact all who have been able to deal successfully with youthful delinquents, though they may differ in other respects in regard to the details of treatment, make it imperative to do everything to maintain the self-respect of the delinquent; on no account is he to be allowed to feel that he is regarded as an outcast, or that his reclamation to social behaviour is considered as hopeless.

5. In accordance with the above account of character we define 'will' as the character-in-action. The whole integrated hierarchy of sentiments constitutes an emotional or psychic force, which is potential in character and kinetic in will. It will be appreciated that in the average individual it is not often that the whole hierarchy is called into operation; it is not often that he has need to 'exert his will.' Most of his routine behaviour springs directly from his ordinary sentiments, sentiments for his family, his business, his garden, or his golf; but should any clash amongst these arise, especially should any of his ideals be threatened, then the whole hierarchy organized about the self-sentiment comes into operation—he exerts his will.

Regarded in this light, shall we say that the will is free or determined? It probably cannot be placed absolutely in either category. It is certainly not 'free' in the sense of being independent of, and arising from outside of, the forces which normally constitute the personality and character. In short, it is certainly not to be regarded as some transcendental force—unless, by that, we mean that spark of the Divine in each of us which impels us to identify ourselves with fine moral sentiments and to commute them into our ideals. That during adolescence and young manhood or womanhood we are so impelled is a matter of common experience, and I know of no explanation of this phenomenon unless it be the one suggested above. On the other hand, the will is not ‘ determined ’ in the sense of being irrevocably fixed by our past, so that present reactions are entirely predictable and inevitable. As Professor J. Arthur Thomson has very delightfully put it : ‘ Three good observations will enable you to predict the return of a comet, but ten times that number will not enable you to say which way the cat will jump ’ ; and we might add, one hundred times that number will not enable us to predict with certainty the way the human being will react. On a purely empirical basis then, it looks as though the will is free. Yet if, as has been maintained above, our sentiments are what they are because of our past experience, this must also apply to the hierarchy of sentiments which constitutes the character ; and if our routine behaviour springs from ordinary sentiments and ‘ willed ’ behaviour (in difficult cases) from the character-in-action, where is the loophole of escape from the determination of behaviour by our past ? It is worthy of note that routine behaviour is predictable in human beings, to a far greater extent than ‘ willed ’ behaviour ; and possibly the loophole lies in the fact that our character never really *is*, but is always *becoming*. From moment to moment new moral sentiments may be taking shape and greater degrees of integration within the whole hierarchy may be achieved ; and under the stimulus of being faced with a hard decision, just such an increase in integration may be achieved in the nick of time to enable the character to prevail, where a moment before, and without the added integration, it would have failed. Even then, however, it could be argued that this new integration must have been coming to fruition as a result of past decisions and experiences. Perhaps, then, the only loophole of escape from determinism is that Divine spark, drawing us ever onward and upward ; and that brings us again perilously near to the transcendental. But, in the writer’s view, this force is not, at any rate, something new and supernatural coming into play from without ; it is the same life-force which is responsible for our being, and for the whole long process of our development. Can it be that, from day to day and from moment to moment, we give sometimes more, sometimes less, heed to the promptings of that Divine spark within us?

6. Summing up the whole discussion of the development of character we may say that the strength of the character depends (*a*) on the formation of a healthy, well-balanced self-sentiment as above described (Chapter Six); and (*b*) on the degree of integration attained, on the extent to which the sentiments forming the hierarchy constitute a *harmonious* group. For example, one may readily imagine a case in which a man's sentiment for his business might be disharmonious with his sentiment for honesty. Inasmuch as this disharmony means a clash between emotional forces which might otherwise be working in co-operation, it will be obvious that it means a weakening of the whole organization, i.e. of the character. The character would be strengthened (though not necessarily improved) if the sentiment for honesty or for the business were eliminated altogether. 'A character at unity with itself . . . is strong by its very negations.'[1] It would be both strengthened and improved if the two sentiments could be brought into harmony. As a positive illustration of the proposition that strength of character depends on the degree of harmony or integration attained in the hierarchy of sentiments, the following may be offered: it was written of the late illustrious editor of the *Manchester Guardian*, Mr. C. P. Scott: 'His courage was in a sense effortless, for it was the courage of a man to whom no strain caused by external trouble or danger would have been so great as the strain of disharmony in his own mind.' This achievement of complete integration and harmony of all the several emotional urges of the respective primary instincts, resulting in this apparently effortless behaviour, may be compared to the integration of the colours in white light, having the same unobtrusiveness. The analogy further suggests that this harmonious and undifferentiated emotional urge is the true form of psychic energy which merely becomes differentiated into the several qualitatively unique emotions by its manifestation in animal forms. In man, made perfect, it should present its true form.

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[1] *The Mill on the Floss*, Bk. V, Chap. I.

On the other hand the *quality* of the character depends quite obviously on the nature of the moral and other sentiments forming the hierarchy. For example, the character of Silas Marner was spoiled by his powerful sentiment for money; that of Napoleon, or Wolsey, by his sentiment for power; that of Clive by the absence of a sentiment for honesty. Again, by way of a positive example, should a man have formed a sentiment for truth, for independence of judgment, for real toleration, for courage, for duty and service to the community, for self-control, and a sentiment of love for his fellow-men and of compassion for animals, we should have in him the makings of an ideal character.

Adolescence

7. It may perhaps seem strange that, in the foregoing account of the stages in the growth of the individual, little specific mention has been made of this subject. This omission of reference to the period of adolescence, as a separate epoch in the development of the individual, has been made designedly, the more to emphasize that the formation of character, the rise through the four levels of behaviour, is a continuous process. The adolescent period does not differ in kind from the other phases of life; the same essential motive forces, the emotions, are operative throughout, only, as we saw, becoming more and more closely integrated, and with perhaps some adjustment in the degree of emphasis placed on some of the factors involved.

There is no doubt, however, that the adolescent period does present some new features. The pre-adolescent stage is marked by a well-developed self-sentiment; the child of ten or thereabouts has made his adjustment to authority and reality, and within his narrow sphere is a confident and efficient little egotist. And adolescence has been well described as the addition of a new storey to this solid foundation, a storey of which the special features are the formation of moral sentiments and their adoption as ideals, making possible true discipline and the rise to the fourth level of behaviour. Many writers have also drawn attention to a marked development in the power of reasoning, to religious conversions and general emotional instability, to a special resentment of coercion, and to a development of sex-consciousness. Is there any one aspect which may be regarded as the dominant and indispensable characteristic of the period?

8. Such a feature is to be found in the emergence of what may be called a social-consciousness, a realization of oneself as a member of the community at large. The direct evidence that such a development is taking place may be briefly summarized as follows:

(*a*) Dr. Crichton Miller in *The New Psychology and the Teacher* has drawn attention to the fact that at the beginning of adolescence, or just before that period, the main current of interest in the case of both boys and girls (but usually somewhat earlier with the latter) ceases to centre on home and the parents and becomes attached to the schoolfellows. Most parents would confirm this, however reluctant they may be to admit the seeming blow to their prestige.

(*b*) It is at the beginning of the adolescent period that boys and girls develop that phase in which societies (more or less secret) absorb so much of their attention and interest; when they write in 'codes,' talk in 'gibberish' amongst themselves, and evolve rituals. It has been called the 'gang age.'

(*c*) Young children's play is very largely individual and a field for the display of personal prowess; it is not until adolescence that team games become popular and are played with any marked display of the team spirit.

(*d*) During adolescence the young men and maidens become much more particular about the dress fashions and the general ritual performances of their community; their susceptibility to social approval and disapproval becomes much more pronounced.

(*e*) Amongst primitive peoples, in all parts of the world, the onset of adolescence is marked by initiation ceremonies, varying exceedingly in form, but always intended to impress upon the individual his membership in the tribe, especially to see to it that in realizing this membership he shall be made fully aware of his responsibilities in that connection.

9. These observable facts leave little doubt that the emergence of social consciousness is at least a factor of the situation. It is to be regarded as the dominant factor mainly because of the manner in which it explains and knits up into one harmonious whole the other observable features of the period referred to in paragraph 7. Consider for a moment the development of reasoning. It would, of course, be absurd to suppose that there is no reasoning before adolescence, but there is at this time a strong development of this power, especially in that it becomes more capable of dealing with the *abstract*. This development is comparable, though not equal, to that extraordinary development of intelligence which occurs during the first three or four years of life, accompanied by the almost miraculous development of language.[1] But the important point for our immediate purpose is that just as the first spurt in the development of intelligence is called forth by the need of adjusting the indeterminate instinctive reactions to a complex environment of physical things and personal relationships, so the emerging *social* consciousness of the adolescent presents him with a new set of difficult problems, in the endeavour to make a proper adjustment to the growing complexity of social relationships ; and these problems call forth, and give a spurt to, the further development of intelligence. Further, since the problems presented by the *social* adjustments are, generally speaking, more abstract in nature, the development of more abstract thinking is promoted. For example, a child just entering the adolescent period came home from school with the story that she was bracketed top of the class and that several other girls were grouped together within one or two marks of the top—her tone suggesting regret. Her mother said, 'How nice for your teacher' ; but the remark puzzled her, promoting just the kind of thinking under discussion, in the endeavour to adjust herself to the community aspect of the class.

Next consider the development of moral sentiments and idealism which is characteristic of the adolescent period.

[1] Cf. p. 190.

The point which, for our present purpose, requires to be stressed is that all moral ideas (e.g. honesty, duty, self-control, tolerance) imply a reference to a greater or lesser social group;' they would be stripped of all significance for a completely isolated, self-sufficient individual (if we can imagine such a being). This fact is more generally stated by saying that an action will be termed moral or immoral according as it subserves or subverts the well-being of the community. Of course an action may be so described in a purely objective sense, i.e. it may be moral even though the person responsible was not consciously seeking the communal welfare; but there can be no moral *idea* for that person, in that connection, until he *is* conscious of the social bearing of the action. It follows that moral sentiments and ideals cannot be developed by any individual until he is conscious of his social bearings and obligations. Hence it is that we speak of the lying and selfishness of young children, not as immoral, but as amoral. The emergence of social consciousness is a pre-condition of the development of adolescent idealism.

The emotional instability of which so much is made in most of the accounts of adolescence is probably a somewhat over-estimated feature: we tend to make special note of it when it is very marked and to overlook those cases in which it is less pronounced. Such instability, however, certainly does occur to a greater or lesser extent, and is generally attributed to the sex instinct, which, although not entirely dormant during childhood, undoubtedly becomes a more prominent feature of the mental life during adolescence. Perhaps the best way to express the change is to say that the adolescent becomes definitely *sex-conscious*, and the new feature is again not unconnected with the emergence of social consciousness, or rather one particular aspect of it. For the full advent of sex-consciousness accompanies the dawning significance of marriage and parenthood as profoundly important social relationships towards which the adolescent realizes that he is moving, even before they are thought of with any special personal reference These relationships are naturally typified for the adolescent primarily in his own parents, but also in other families known with some intimacy, and in the books which he reads. It follows that the quality of the sex-consciousness which develops will be profoundly affected for good or ill —tinged with tenderness and confidence or grossness and fear—by the quality of these typical examples.

The emotional instability, however, is certainly not due to the sex instinct only. It is partly due to the development of the moral sentiments, and more especially to the fact that the inclusion of these in the hierarchy of sentiments is not infrequently the cause of, at least, a temporary conflict and disharmony. For instance, the development of a pacific sentiment (' turning the other cheek ') might be temporarily in conflict with the self-sentiment, or with a sentiment of duty to one's country. Or a sentiment for truth may come into conflict with a sentiment of love for one's best friend. All such conflict means instability until some harmony or compromise is effected. Of course, such conflicts may occur at any period of life, but because the adolescent is developing more moral sentiments than he is likely to do at any later stage, he is particularly susceptible. Note again that, since the formation of moral sentiments is dependent on the emergence of social consciousness, the emotional instability arising because of them is again connected with that general factor. And, in passing, an instructive comparison may be drawn between this adolescent instability and that of a child of about three years, when a new brother or sister arrives, and necessitates an adjustment of personal sentiments which may be in conflict.

10. When we turn to the consideration of the treatment of adolescents, we are at once brought up against that other very generally recognized characteristic, their resentment of coercion. Attempts to drive by threats, by appeals to fear, are distasteful and are resented at any stage of life because they mean a direct thwarting of one of the most powerful of the instincts, self-assertion. But without doubt they are peculiarly odious to the adolescent for at least three reasons besides the general cause just referred to. In the

first place, adolescents are just becoming conscious of themselves as members of the *adult* community, and punishment or any form of compulsion is associated in their minds with childhood and appears as a special attack on their prestige. Secondly, as we have seen, there is normally at this time a special development of reasoning, and adolescents are at least sufficiently conscious of it to realize that reason and coercion are entirely different lines of approach ; feeling themselves capable of the higher, they resent an appeal to the lower. Thirdly, this is also the heyday of the development of ideals, and once again they resent an appeal to lower motives as a slur on their development. These three causes of resentment might simply be summed up by saying that coercion is incompatible with the self-sentiment, but there is a *freshness* about the adolescents' newly realized status, power of reasoning, and idealism, which makes them peculiarly sensitive to the uncouth blasts of coercion. By all the factors of his situation he can be led, but not driven.

Clearly then this is the psychological moment to make a bid for the development of true discipline, to lay our cards frankly on the table, abjuring absolutely all forms of violent compulsion, and resorting to forceful restraint only when that is clearly demanded by the interests of the community ; and on such occasions let us be quite frank in stating that we do not anticipate from this forceful restraint any real improvement in the character of the individual under restraint, that we are reluctantly compelled to adopt it for the common good, and that we are anxious to relinquish it as soon as possible in order to give the offender that free choice of action upon which real moral development depends. And, thereafter, let it be known as unobtrusively as possible that we implicitly expect the best ; it is the surest way of eliciting it. It is instructive to recall that the attempts of young delinquents to escape from Borstal Institutions were reduced almost to nil when the doors *were left open.*

Finally, it need hardly be said that, since the most fundamental characteristic of adolescence is the emergence of social consciousness, and since it is also the period before all others for the adoption of ideals, this is pre-eminently the time for the arousal, by the right presentation of literature and history, of appreciation and admiration of all that is noblest and best in human behaviour. Whatever plans may be proposed at any time for the amelioration of world conditions in the social, political, and economic spheres, their success depends in the last resort on the reaction of the individual to his social obligations. It depends very largely upon our handling of the adolescent whether the social consciousness, which willy-nilly is developing under our hands, shall emerge with a positive and glad recognition of social responsibilities and opportunities for service, or with a negative attitude towards what appear as the demands and restrictions of 'the other fellow.' Given the right treatment and opportunity, the great majority will develop the attitude of the 'conscious and rejoicing cog' in the great machine working for human welfare.

Suggested topic for class discussion or debate.—Are the first five years of adolescence the crucial period in the formation of character?

Books which might be consulted :

W. McDougall, as for Chapter Four.
Susan Isaacs, *The Children we teach* (1932) ; and *Social Development in Young Children* (1930).
Alfred Adler, *The Education of Children* (1930) ; and *Understanding Human Nature* (1928).
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C. Fox, *Educational Psychology.* Rev. ed. 1935.
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Bertrand Russell, *On Education in Early Childhood.* 1926.
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V. H. Hazlitt, *The Psychology of Infancy.* 1933.
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L. B. Pekin, *Co-education in its Historical and Theoretical Setting.* 1939.

CHAPTER IX

THE SCHOOL : ORDER AND DISCIPLINE

If I speak with the tongues of men and of angels, but have not love, I am become sounding brass, or a clanging cymbal.

The School as an Instrument of Education

1. We have now, as it were, completed the first stage in our journey ; we have reviewed the motive forces of behaviour and have traced the manner in which these are organized in the formation of character, keeping in mind especially the influence of parents and teachers on this process. We next turn to the consideration of some aspects more directly concerned with the technique of teaching. This, therefore, is the appropriate point at which to consider the nature of the school itself.

Whatever may be the final verdict on the question of heredity reviewed in Chapter One, there is one form of inheritance in regard to which the paramount importance of education can never be questioned. It might, in fact, be truly said that the main business of education is the transmission (from generation to generation) of the *social* heritage ; for without the transmission of that social heritage mankind would fall back, in one generation, to the most primitive condition of savagery, lacking even language, not to mention all the tools and machines, the skill and knowledge, the art and literature and ideals which make human life what it is to-day. That being so, the claims of education to the very best that each generation can give in buildings, equipment, personnel, and high endeavour are so patent that to do anything more than simply state them would be to belittle them.

But although the word 'education,' as generally understood and used, is for all practical purposes always associated with activities undertaken at some form of school or college, it is universally recognized that the school is only one among many institutions by which education is carried on; and perhaps not even the most important one. After all, it is in the home that the first stages of physical and mental development take place, including that marvellous achievement, the acquirement of language; and certainly no later stage can compare with this initial one, either in the rapidity of the progress made or the importance of the ground covered. But even the school and the home together by no means cover the whole field; in fact, as we have already seen, reforms and improvements in the social and economic spheres are closely interrelated, causally, with progress in education; or, as Professor Clarke put it,[1] we educate not only *for* society, but also *by* society. The complete educating instrument is no less than the sum of all the social institutions which comprise the life of the community. The social heritage, which it is the business of education to distil and transmit to each succeeding generation, is embodied, partly, in a large number of such institutions and societies; for example, amongst primitive peoples there have always been more or less prolonged and important initiation ceremonies at puberty, hunting expeditions, sacrificial rites at sowing-time, through participation in which the young inherited the collective wisdom of the tribe; and amongst ourselves, out of innumerable examples, one may mention churches, debating societies, choral societies, trade unions, and a variety of humanitarian societies, serving incidentally the same purpose. The school, however, differs in one important respect from all these; in its case the word 'incidentally' in the last sentence, must be omitted.

2. The school, then, is the instrument of education *ad hoc*; but the main purpose at this juncture is not to emphasize this peculiar feature, but rather to insist upon its essential similarities to all other institutions by which society educates its members, and above all to discover something of its fundamental nature by examining the common characteristics of all such institutions. What constitutes the essence and core of any one of the societies

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[1] See *Essays in the Politics of Education*, Chap. II, where this theme is fully discussed.

enumerated in the previous paragraph? What gives it unity and holds its members together as a truly corporate group? The answer is surely that there is in each such society or institution some central idea or system of ideas, in regard to which all those who are truly members (as distinct from some who merely pay a subscription and lip-service) adopt a common attitude and entertain similar feelings. For example, the members of a Native Welfare Society differ as individuals in a hundred ways, but they constitute the society just because they hold in common the belief that in all questions affecting the native peoples the first consideration must always be the welfare of those peoples themselves and their development as an integral part of the community as a whole. If a man holds that the Bantu are here primarily for the *use* of white men, then however admirable a man he may be, he does not become a member of this particular society. Such community of interest and purpose *is* the society and without it all the 'aims and objects, rules and regulations,' regalia and buildings, constitute merely an empty shell. Further, such a society lives in and through the co-operative striving of its members towards a common end, and we measure the vigour and value of the society by the extent to which all the members share in its activities. (Most of us have had experience of the moribund kind of society in which one or two members carry on its activities while the majority are mere passengers. With such a society we have no patience; we rightly feel that it should be either mended or ended.) Again, when new members are introduced to such a society, they gain a real insight into its life and purpose, not so much by what is told them as by participating in its vital activities; and incidentally the old members by assisting in the initiation of the novices gain a fuller realization of the social significance of those activities, for it is a part of their purpose to make clear that social significance.

3. And now, to what extent can we say that the school as we know it is covered by the above description, which of course should be quite as appropriate to it as to a debating society or a Native Welfare Society? Is the school always

consciously imbued with one central idea? Is it characterized by co-operative striving of all its members towards the realization of that idea? Are all encouraged to participate fully in its activities? One immediate difficulty will probably be pointed out at once, viz. that membership in this case is legally compulsory, and consequently there is a danger that many are in the school without adequately realizing or subscribing to its central idea. The result in such a case is naturally a want of unity of purpose and harmony. The danger, however, is not nearly so important as it might at first sight appear; for the compulsion is really upon parents, and if they are wise in their attitude towards the matter (as most of them are) the children need never know that their attendance at school is obligatory. That to some extent the danger does exist, however, the writer is convinced by some experience of the work in Indian schools in Natal, attendance at which is rather a privilege than an obligation; there is certainly a noticeable difference in the attitude of the children as a whole.

But, in so far as this difficulty is genuine and unavoidable, it must simply be recognized by teachers, as the first step towards mitigating it; and it certainly can be mitigated if the tradition of the school, and the attitude of the teachers, are set aright. A fact in this connection, which should give pause to us teachers in our very human endeavour to shift the blame on to something else, is that in the first two or three years at school almost all children do heartily fall in with all its activities and co-operate to the full; it is only later that the all-too-common attitude of passive resistance begins to develop and seriously mars the effectiveness of the school. It has ceased to be a society living in and through shared activities. Instead of co-operation we find coercion, and teacher and child drift into an attitude in which each regards the other, generally quite mildly, but unfortunately quite naturally, as an adversary! The results are not far to seek: the first and most obvious is a most deplorable waste of time and energy, both of the children and of the teacher. What teacher of experience has not had occasion to marvel at the time and energy which pupils will put into avoiding the performance of a school task? There can be only one explanation in the great majority of cases: it is a means of scoring a point off the natural enemy!

But serious as that result is, it is as nothing compared with the damage which is being done to the child's general attitude to authority and to his community. We saw in Chapter One that the most important aspect of that citizenship, which we are out to develop, was the inculcation of the will to serve the community; yet by allowing our schools to degenerate into a scene of coercion instead of one of co-operation, we are promoting the adoption and fixation of an attitude which is the very antithesis of that will to work *with* others for the common good. So long as our schools are so marred there is little hope of their turning out a generation of men and women who can set out, in mutual confidence and goodwill, to remedy the glaring defects of our political, social, and economic systems. Coercion may produce 'the letter that killeth,' but never 'the spirit that giveth life'; or as John Dewey has put it: 'Attempts to coerce may produce a sporadic act here and there, but will not direct the general course desired; it is more likely to deflect it into subversive channels; from coercion no improvement of disposition, no educative effect, need follow.' It will be shown presently that the penultimate word might well have been 'can.'

4. As the schools are at present organized, this tendency to coercion arises principally in connection with the maintenance of order. If the school is, as we have seen it ought to be, a society embodying a central idea and purpose, it will be obvious even to the children that, without order, the purpose of the school community cannot be fulfilled. Yet where we have numbers of high-spirited children, order is not easily secured and maintained. For that very reason it presents one of the best possible fields for developing in the children the will to subordinate self to the communal well-being. True, this is a far less spectacular way of serving the community than many others, but it is probably all the more really valuable on that account.

At this point it is necessary to draw a clear distinction between the *maintenance of order* and true *self-discipline*. The former implies extra-control, i.e. control by the teacher or the head-teacher though not necessarily coercion. The latter means self-control; it springs from within. It will be obvious that discipline is our ultimate objective in this matter, but since it is hardly to be expected of young children, the teacher in the lower standards is faced with this problem: how to maintain order, or exercise control, by such means as will gradually lead on to the development of self-discipline, and to avoid all measures calculated to inhibit that development.

5. Amongst the more important means which the wise teacher adopts are:

(*a*) Keeping the children busy; not only because activity is one of the most natural and obvious characteristics of children, but also because keeping them busy implies finding suitable outlet for self-assertion, the dominant instinctive urge in the great majority of children. This point needs to be borne in mind especially (i) at such times as the teacher is busy at the blackboard; the precise occupation to be provided will depend on the circumstances of the moment, but a resourceful teacher will not fail to find something which may *profitably* be done; and (ii) in such lessons as history when there is a strong temptation for the teacher to monopolize the situation; here the remedy lies in well-timed and well-framed questions, and in the making of time-charts and other illustrative diagrams.

(*b*) Arousal of interest: (i) by means of pictures, demonstrations, and experiments; it is true that these should not be relied upon to provide the main interest of the lesson, for, if they are, they are liable to absorb too much of the attention to themselves instead of directing it on to the facts or principles they are intended to illustrate. The main interest should arise (ii) out of the sentiment for the subject and the perception of its bearing on the child's other sentiments—on his general out-of-school activities.

(*c*) Securing good physical conditions in the classroom;

it will be obvious that good order cannot fairly be expected if the seats or desks are unsuitable and uncomfortable; if there is much noise from adjacent traffic; if the lighting is bad or the ventilation unsatisfactory. These points need no comment.

(*d*) Example and suggestion: this is probably the most important of all the means; it requires of the teacher thorough preparation so that he may set about his work without fumbling and with manifest earnestness. His own attitude will then be communicated to the children by means of primitive sympathy (to which reference has several times been made). The gregarious instinct also assists in the maintenance of order in another way. Because of it, we are all, but especially children, open to what is known as *suggestion*, which means that, under certain conditions, we tend to accept, and act upon, a belief in the absence of any logical grounds in support of it. Such beliefs we accept either at the hands of leaders of the herd in any particular sphere (in which case it is known as 'prestige suggestion') or from the herd as a whole (mass suggestion). Now the teacher has every opportunity of establishing himself, for the school-child, as a leader of the herd, and therefore if he tacitly assumes that he will be obeyed (and, of course, is reasonable in his commands), then prestige suggestion operates, and the child finds himself obeying as a matter of course. Also, if there is a right tradition in the school, the child finds that it is part of the accepted order of things that the teacher's wishes and commands are respected, and mass suggestion also operates to secure his willing compliance.

At this point it may be noted that, if offences should arise, the wise teacher will drop upon the individual offender at once and by name; and will not proceed, as a matter of course, until order is restored—his attitude, in the meantime, being one of pained surprise. Further, if punishment becomes inevitable, a most effective form is to exclude the offender from participation in the activities of the group, as long as the behaviour complained of persists. Here again we are making use of the gregarious instinct, and that being so, it will be perfectly obvious that if there are two or more offenders, they must not be permitted to form a separate group ; isolation is essential.

6. However, if the suggestions outlined above are given effect to, i.e. if there is plenty of scope for the activity of the children, if there is earnestness and thorough preparation on the part of the teacher, if there is reasonable comfort and a good tradition in the school, there will be little occasion for punishment, and we shall have reason to anticipate during the early years of adolescence the emergence of true discipline, i.e. the exercise of self-control. That this can be achieved without any sacrifice of the zest and vigour of life, has been amply proved in numberless schools where the new spirit prevails, where the staff has set about the task with confidence and with the right attitude towards the pupils. But, like all other moral qualities, self-control depends ultimately on the development of a moral sentiment and can never be produced by force from without. By coercion we may produce a specific desirable habit, but it operates only in the particular sphere in which it was developed. By coercion we may engender a measure of self-control in a particular class, or even perhaps throughout a whole school, but only when our adolescents, having a free choice between good and evil, form a moral sentiment (and ultimately an ideal) of self-control, can we expect that type of behaviour to outlast their school careers, and permeate all other spheres of their activities ; only then can we expect the emergence of true discipline. Coercion rules out that free choice between good and evil ; as Hobbes pointed out long ago, the person who acts or refrains from action because of the fear of punishment is merely choosing between two evils—punishment and a distasteful line of action. And the fact that the latter is chosen as the lesser of two evils does not make it any less distasteful ; rather more so. Consequently when the fear of punishment is removed, this line of action will almost certainly be abandoned. Another writer, Geraldine Coster, has put it thus : ‘ While a knowledge of inevitable consequences is a valuable aid to discipline, the fear of consequences is the most

disastrously inhibiting thing in life ' ; for it definitely prevents the development of true morality.

7. But while this inhibition of the development of true discipline, and of morality in general, is the most serious consequence of coercion, or appeal to fear, it is by no means the only one ; there are many others—moral, mental, and physical.

(*a*) *Moral.* Dr. Burt, in *The Young Delinquent*, writes concerning the cases brought to him for treatment from the L.C.C. schools : ' Time after time, we have seen the real precipitating cause of trouble to be injudicious attempts to rule by threats and penalties imposed from without. . . . All forms of intimidation should be dropped.' In regard to corporal punishment he says, after making generous concessions as to the possibility of its being useful in certain special cases : ' Yet when all is said, in ninety-nine cases out of a hundred, corporal punishment, however inflicted, is likely to make the incipient transgressor, not more penitent, but more furtive and defiant ; and impunity would do less harm.' These are powerful statements when it is reflected that they come from the pen of a man who probably was dealing with more ' hard cases ' in the course of a week than the average teacher meets in a year.

Another careful investigator, Havelock Ellis, after reviewing the evidence tending to show that corporal punishment is liable to arouse the sexual passions, concludes : ' These facts peremptorily command all who are concerned with education to eschew this and all other forms of corporal punishment.' Note : ' peremptorily command '—but this is not *too* strong when we consider what is implied in the possibility of a premature arousal of sex passion.

William Stern, a German psychologist, who has specialized in young children, says that ' almost without exception ' serious lying in children is the outcome of fear.

We have already noted that coercion tends to produce the ' natural adversary ' attitude between teacher and pupil, with all its attendant waste of time and energy. It further tends to the production of a chronic condition of slacking n a good many children, to which we have become so accustomed that we accept it as inevitable and natural, shutting our eyes to the fact that no child who is normal slacks in the pursuit of anything which has real life and meaning to him. And unfortunately, once developed, this chronic condition of slacking tends to persist, giving us that sprinkling of clock-gazers and mere 'passengers' in the world of commerce and industry.

Finally, the abandonment of coercion, and especially of corporal punishment, is an essential part of any peace propaganda in our schools. One of the essential marks of civilization is the progressive elimination of the appeal to violence as a means of settling our human differences. Though the nations are now engaged in probably the most frightful of all wars, the eighth point of the Atlantic Charter reads : 'They believe that all of the nations of the world, for realistic as well as spiritual reasons, must come to the abandonment of the use of force.' Sceptics will, of course, remind us of the League of Nations, and of the Kellogg Pact ; but past failure is for men and women of spirit the spur to greater effort. And while there may be many subsidiary reasons for these past failures, teachers would do well to remember that for final success, it is essential that we should send forth from our schools a generation of young men and women accustomed to seek the settlement of differences by reasonable and peaceable means. This we cannot do if we resort to violence in the settlement of our own differences with the children.

(*b*) *Mental.* We have already noted the widespread reactions produced by the additional secretion of adrenalin under the influence of fear and anger. The brain being depleted of its full oxygen supply cannot function fully. As usual, Coleridge has given a very telling description of this emotional reaction :

> Fear at my heart, as at a cup,
> My life-blood seemed to sip !

Most of us at some time or another have experienced this, together with the numbing effect which it has upon our mental activities ; and Bertrand Russell has said no more than the simple truth in the sentence: 'Fear . . is disastrous in all cases where the right course can be discovered only by thinking'—i.e. almost always in a civilized community, and quite always in school activities. The arousal of simple, unmodified fear in a school child, therefore, must always be disastrous—an act of culpable folly.

It may be objected that after all a 'burnt child dreads the fire'; but does any one seriously think of making use of such a method?[1] The fact is that a child who 'dreads the fire' has not really learned anything useful. We do not want children to *fear* things, but to *know* the properties of those things and to act accordingly with due caution (fear and positive self-feeling).

(*c*) *Physical.* It is a general belief that, in cases of epidemics, those who go about in fear of the disease are generally among the first to contract it. This may possibly be an exaggeration, but, in any case, there are several well-authenticated specific cases of fear inducing a particular disease. For instance, there is the case of the condemned criminal in Paris who was obliged to occupy a bed which he was told had just been used by a man who had died of cholera. He developed the disease though the bed was perfectly clean. Further, Dr. McDougall has given it as his opinion, as the result of personal observations, that the prevalence of Graves's disease (a form of goitre) during the 1914–18 War was due to the excessive stimulation of the thyroid gland by the continued adrenalin secretion resulting from chronic fear. And, of course, one may mention the hundreds of cases of neuroses which are produced in war by repressed fear.

With all these facts before us we cannot but feel that McDougall's description is the literal truth: 'Fear is an anachronism that can do nothing but harm.'

8. Assuming, then, the exclusion of fear and coercion and in place of these the inculcation of an ideal of self-

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[1] I have indeed met a man who said that he taught his child not to play with matches by deliberately burning him, but I like to believe that he was one in several millions.

control, we may reasonably anticipate in the school something of the unity of purpose and active co-operation which characterize the best type of choral, debating, or humane society. Yet, if full co-operation is to be secured, teachers and parents must also realize that childhood is not, for the child, a period of preparation for adult life. To him, each stage as it comes *is* life ; his childish triumphs and sorrows are to him fully as acute, perhaps more so, though not so lasting, as are those of the adult. The teacher therefore must be capable of genuine sympathy with feelings, both of elation and sorrow, which are not quite natural to him in that they seem out of proportion to their causes. It is further implied that the development of the child is a process of *growth* and must therefore be promoted and guided from within ; hence to the teacher is necessary a knowledge of the dominant motives and interests of childhood. It is true, but quite incidental, that by helping the child to live out his own life to the full, with unobtrusive guidance at critical points, we are also helping him to make the best possible preparation for the later stages which are to follow. But all will fall flat unless we recognize the child's point of view and encourage him to take the initiative.

No reference has been made to the numerous experiments in self-government in schools, not because the writer is unsympathetic towards them, but because they represent a form of adventure which it is unlikely that young teachers will embark upon in the early years of their experience. That such plans can be successfully operated, in varying degrees according to circumstances, has been proved beyond question : and development along these lines is certain. But one caution is offered to the teacher about to make experiments ; be sure to warn the children in advance that the plan is not going to make things easier for them, but very much harder. For self-control, though obviously more desirable and beneficial, is always harder than extra-control.

9. We have now reviewed the features that we must look for and avoid in the school as suggested by comparison with other institutions by which society educates her

members. Let us examine briefly one or two of the advantages which derive from the fact that the school is the principal *formal* instrument of education ; advantages which spring chiefly from the fact that, having no other purpose to serve than to educate, it can range, for its pabulum, over the whole field of human experience. Thus it can offer to a group of South African children not only their own immediate and peculiar social heritage, but can include both the ancient and the remote in so far as these may be found to illuminate their present experience. Further, it can simplify by the omission of the unimportant, can select what is likely to prove stimulating and edifying, and can eliminate what is undesirable and likely to arouse anti-social responses. Finally, by inculcating a just appreciation of all that is worthy in the great common heritage of all mankind, independent of race or creed, caste or social status, the school may do much to eliminate those class distinctions and racial prejudices which do so much to embitter the life of mankind at the present time.

Suggested topic for class discussion or debate.—No real or lasting good can be done for the development of character by force from without.

Books which might be consulted :

W. McDougall, *Character and the Conduct of Life* (1927), and as for previous chapters.
D. A. Thom, *Normal Youth and its Everyday Problems.* 1932.
P. Sandiford, *Educational Psychology.* 1928.
T. Raymont, *Modern Education.* 1935.
J H. Simpson, *An Experiment in Education.* 1917.
T. E. Blewitt (editor), *The Modern Schools Handbook.* 1934.
E. Thring, *Theory and Practice of Teaching.* 1883.
Burt, Homer Lane, and John Locke, as for Chapter Six.
W. B. Bayles and H. W. Nudd, *The Problem Child in School.* 1925-29.
J. H. Simpson, *Sane Schooling.* 1936.
A. B. Allen, *The Psychology of Punishment.* 1936.
W. Schobaus, *The Dark Places in Education.* 1932.
J. Duncan, *The Education of the Ordinary Child.* 1942.
C. W. Valentine, *The Difficult Child.* 1940.
M. Milner, *The Human Problem in Schools.* 1939.
J. H. Badley, *A Schoolmaster's Testament.* 1937.
P. M. Symonds, *The Mental Hygiene of the School Child.* 1936.
D. E. M. Gardner, *Testing Results in the Infant School.*

CHAPTER X

THE LEARNING PROCESS AND THE PROCESS OF THOUGHT

Image the whole ere you execute the parts.

1. In the previous chapter we have considered the conditions under which the school may become the scene of co-operative effort in the pursuit of a central idea and purpose. From the child's standpoint that purpose is summed up in the verb 'to learn'; and, on the basis of such experiments as that described in Chapter Seven, Thorndike developed his conception of the Laws of Learning —a conception which has been widely accepted in recent years. The first, the *Law of Effect*, states that if a particular reaction to a given situation is successful (i.e. if it satisfies the instinctive urge operative at the time) it is accompanied by *pleasure*; this pleasure strengthens or 'stamps in' the last neural pathway traversed, i.e. the one which was successful. Consequently, on the recurrence of a similar situation, the stimulus set up at the sensory end of this nerve pathway is more likely to take that course again and thus produce the same successful and satisfactory reaction. (Originally the stimulus at the sensory end might find outlet along a number of different channels—hence the 'random' movements.) On the other hand, if the reaction fails, it is accompanied by pain, and the nerve-pathway involved is not stamped in, so that that reaction is not so likely to recur.

Secondly, we have the *Law of Exercise*, which states simply that when a pathway has been 'stamped in' by success and pleasure, the oftener the nerve impulse passes that way, the more indelibly is the pathway 'stamped in,' and the more readily will that particular reaction recur.

2. It should be observed that the above interpretation of the learning process is based upon the assumption of

specific 'neural pathways' connecting the central nervous system with muscles (and other effector organs); that a muscle contracts when, and only when, a nerve impulse passes along the particular chain of nerve fibres which constitutes its specific connection with the central nervous system. But the existence of such specific 'neural pathways' has long been regarded as highly problematical, in view of the fact, for instance, that in the healing of a nerve (consisting of some hundreds of thousands of nerve fibres) after it has been accidentally injured, it must be very doubtful whether each fibre is connected up once more with precisely the same fibre as originally. And recently Weiss has carried out certain experiments on animals which confirm this doubt; he writes, as quoted by Petermann: 'The means by which the central nervous system maintains concord with each muscle individually does *not* consist in *separate paths* of concatenation. . . . We must postulate some sort of specific, individual excitation-constitution for each end-organ, distinguishing one from another. . . . The nature of every muscle is such that—given natural excitation—it does not react to every excitation, but only to excitation of a quite definite form, characteristic for it. . . . The total impulse flowing towards a particular peripheral region from the central nervous system can, figuratively, forthwith be designated an "excitation clang." This excitation clang consists of "excitation tones" for the muscles which are to be activated at a given moment, and hence it is constantly fluctuating in its composition. . . .' Every muscle, in accordance with its constitution, selects the components appropriate to it,[1] i.e. its own peculiar 'excitation tone.'

It will be realized that, if this theory is substantiated (and in any case the former theory of specific 'neural pathways' seems to be disproved), then what requires to be 'stamped in' by success is not a particular pathway, but a particular 'excitation clang.' Now this emanates from the central nervous system, and if there was difficulty in understanding how the *subsequent* event, success, could influence the neural pathway traversed in producing the successful action, there is still greater difficulty in apprehending how it could affect the antecedent 'excitation clang.' In brief, Thorndike's explanation of the laws of learning in terms of some form of mechanical 'stamping in' seems to be very dubious.

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[1] Petermann, *The Gestalt Theory* (1932), pp. 129–31 and *passim*.

In any case it will be appreciated that, since, as shown above, simple success and failure operates as the dominant external control of behaviour only at the first level, these laws have but very diminished value when applied to school children and adolescents. For their behaviour is typically at the second or (in the majority of cases) at the third level, where social approval and disapproval, and the appeal to intelligence, play a far more important part than simple success and failure. Thus, for instance, we do not feel satisfied (the pleasure of success is much diminished) if we solve a problem by a process of exhaustion, by trying the various combinations of the factors involved till we happen to hit upon the right one; this is true whether the problem is of an academic nature, e.g. a 'sum' in arithmetic, or of a practical nature, e.g. the development of some car trouble while travelling. Nor is the absence of satisfaction by any means the most important disadvantage of this method; it is apt to be a very long and tedious process; there is no guarantee, in the case of a complex problem, that we shall hit upon the correct combination within the time available (however long that may be); and, perhaps the most serious disadvantage, this method can give no assistance in the case of similar, but not identical, problems which may occur later.

It may be conceded, however, that the laws do have some significance in the very early years of child life, in learning, for instance, the control of limbs by stretching out to take hold of attractive objects, and by handling everyday utensils and playthings; also in the early years of school life, in such elementary learning processes as spelling and addition and subtraction bonds. Even these, however, we seek to rationalize as far as possible. On the whole, therefore, these laws of learning may be very useful to menagerie keepers, but are not very helpful to teachers.

The Process of Thought

3. What then are we to substitute for these laws, for purposes of human learning? It seems clear that instead of this success and failure procedure we should aim rather at encouraging children to analyse the situation in order to discover the essential features and so arrive at a solution by thinking. In fact, Dewey in his *Democracy and Education* puts forward the view that all that school can or need do for the child is to teach him to *think.* In view of all that has been said in the foregoing chapters in regard to the paramount importance of the will to serve the community, it will be realized that this dictum cannot be accepted in its entirety; ability to think may quite easily be the means of making gross self-seeking more efficient and therefore more dangerous. No one would doubt Iago's ability to think.

Apart from this, however, it would generally be held that the school should, and does, impart to the children certain essential elements of skill and knowledge, without which their ability to serve would be very sadly impaired. It is true that such skill and knowledge are best acquired through processes of thought; in fact, to reach their maximum utility they must be so acquired. But there appears to be a certain danger in focusing attention, as exclusively as Dewey's dictum suggests, on the *process* of thinking to the neglect of the *content* of thought; the danger that in the course of years a new formalism, not unlike that of the formal disciplinarians, might arise, in which this or that subject would become established as the medium, *par excellence*, for the training of thought, the ability thus trained being held to be transferable to any other sphere. Ability to think is not to be trained in any such specific way, any more than is the faculty of concentration or of humour; ability to think is developed *incidentally*, in the course of pursuing, *in the right way*, subjects whose place in the school curriculum is secured on quite independent grounds, namely, because of their bearing on contemporary life, because they promote richer and more complete living.

4. The emphatic phrase in the last sentence, 'in the right way,' means that the pursuit of these subjects must involve thinking ; for we learn to think more effectively only by trying to approach in a thoughtful manner the matters which occupy our minds from hour to hour. It is imperative, therefore, that teachers should have the clearest possible grasp of what thinking really is in order that, in presenting the various subjects, they may know how best to promote that thoughtful approach, by which alone the children can learn to think better. For, although a note of warning has been sounded in the previous paragraph, there is no doubt that, on the *intellectual side*, the most important thing which the school is required to do for the child is to teach him to think, and think independently. For, as we shall see when considering the subject of habit, the adherence to established customs and traditions, without any real effort to satisfy oneself by independent thought that they represent the truth so far as it may be presently known, is often the greatest bar to human progress. This tendency represents a perversion of habit ; for while it is true that progress implies turning ever more and more important matters over to habit, this is only the first and preliminary step. There will be no progress, unless we turn our minds, so liberated, to active thought in the tackling of new problems. And, in so doing, one of the most difficult things we may be called upon to face is to be ready, if occasion seems to demand it, to bring back into the field of speculation even our most cherished and, as we feel, established beliefs. There are several spheres at the present time which seem to demand such reconsideration, untrammelled by established traditions ; the problems of industry, production, distribution, and currency, of disease, causation and cure, of racial and international relations, are a few which may be cited as lying in this category. There is no doubt that to turn out the coming generation equipped to tackle these problems *thoughtfully*

is a primary function of the school. How then, precisely, are we to inculcate thinking?

5. Clearly we require to know, first of all, what conditions or situations provoke thought, and then the main phases through which the process passes. In his *How We Think* Dewey has given a masterly analysis of the process, and the following pages seek to provide a simple outline of the more essential features as there developed. (But every teacher, especially after two or three years of experience, should certainly peruse carefully the book itself.)

There is no doubt that thinking begins when we are faced with a *problem* or *difficulty* ; it may be a simple and practical one such as that presented when an electric torch fails to act, or an abstruse and difficult one such as that which was presented to astronomers by the observed disturbances in the passage of Uranus round the sun, and which led eventually to the discovery of Neptune. This insistence on the presentation of a problem as the initial stage in all real thinking naturally excludes a good deal of our mental activity from that category, e.g. reverie and day-dreaming.[1] But the important bearing of this first step for the teacher should be the realization that it is not, as is commonly supposed, his function to explain and clear away difficulties, but rather to *grade* those difficulties, and then encourage the children to independent tackling of them, so far as that is practicable.

6. The next step, after the perception of the problem, is the precise *definition* of the difficulty. It has been well said that a question clearly put is half answered. It is at this stage that the teacher can, *if necessary*, help a good deal, and unobtrusively, by his questions ; and it will be a matter for careful discrimination on his part to decide to what extent he shall, by the form and sequence of his questions, direct this process of definition, and to what extent he may leave it, in any particular case, to the unaided efforts of the children. In either event, this step means the close

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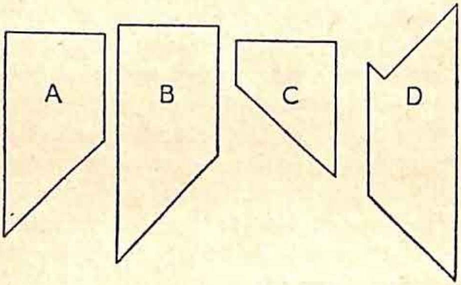
[1] Day-dreaming may be regarded as arising from the problem of adjustment to reality and authority; but it is usually bad thinking because it ignores the realities of the situation.

examination of the facts, the data, of the problem in order to define precisely where the difficulty lies, and the relative importance of the facts constituting the total situation. It will very often take the form of making precise measurements; and upon the care with which this step is taken, will depend very largely whether we *fumble* for a solution, *or* make sure and effective progress, even though it may at first seem slow. At this stage it will be helpful to consider actual cases.

We shall take two examples, the first of a practical nature and the other theoretic.

(*a*) Here we have the advertisement puzzle issued by the distributors of Mazawattee Tea. These four pieces of cardboard, if fitted together correctly, will make a capital T. That is the problem; and the second step, the definition of the problem, means careful examination of the four pieces.



The facts brought to light by this examination are:

(i) Three of the pieces, A, B, and C, have one square end.

(ii) The oblique edges of the first three pieces, A, B, and C, are all different in length.

(iii) The concave angle, in the irregular piece, D, is a right angle.

(iv) The width of the irregular piece, D, is not the same as that of the other three pieces (which *are* the same in this respect).

(v) The (nearly) vertical edges of D are not quite parallel.

The first two points would generally be noted at once;

it requires more effort and discernment to realize that the last three are *salient* facts, and it is this effort and discernment which ensure a good definition of the problem.

(*b*) For the theoretic problem we may take the one already referred to—the disturbance in the orbit of Uranus. In this case, the definition would naturally take the form of the precise measurement of time, the duration, and the extent of the deviations of the planet from its calculated course.

7. The third step in the process of thought is the emergence of suggestions for the solution. Out of the consideration of the data as above, some suggestion or hypothesis arises in the mind which *may* meet the case, may cover all the facts, and make clear their mutual relations. This step is least under the control of the thinker, and permits of least assistance by the teacher without actually giving the matter away. The suggestions cannot be commanded at will ; the thinker, adult or child, must contemplate the facts (i.e. definition) and wait for possible solutions to suggest themselves to his mind. Naturally the flow of suggestions depends primarily on the thinker's knowledge and experience in the particular sphere in which the problem lies ; but to some extent it is a personal factor. In some, suggestions well up in almost disconcerting plenitude ; in others they arise more tardily. In the latter case they frequently show more penetration, but this is not necessarily the case by any means ; it depends upon a factor to which we shall refer later—innate intelligence.

In the case of our practical puzzle problem, fact (i) should suggest readily enough that the three more regular pieces, A, B, and C, belong to the ends of the horizontal, and the bottom of the vertical, of the capital T ; and fact (ii), that they are all to be separated from one another, somehow, by the irregular piece, D. Fact (iii) is crucial ; little further progress will be made until the suggestion wells up in the mind that the concave right angle may be one of the angles between the horizontal and the vertical of the T, and is not to be filled at all. Careful cogitation on facts

(iv) and (v) should help to elicit this suggestion, since they mean that the irregular piece, D, is not to be placed in the same alignment with any of the other three; it will lie obliquely to them.

In the case of the other problem, it was natural that the suggestions should first play around the properties of the known planets nearest to Uranus; e.g. it was suggested that Saturn or Jupiter might be the disturbing factor.

It should be carefully noted that up to this point the process of thought is characteristically *inductive*; by consideration of details we reach up to a general hypothesis which we hope may be found to knit up all the facts into one harmonious whole, i.e. solve our problem.

8. At the next stage the process becomes deductive. For the time being we remove our gaze from the field of actual facts and work out mentally the implications of the favoured hypothesis. *If* it is correct, then this and this fact *ought* to follow. Thus in the case of the puzzle problem, *if* the suggestion that the concave right angle is one of the angles between the horizontal and vertical of the T is correct, then, having placed this piece before us on the table with one of the lines forming this angle, in the conventional vertical position (i.e. running directly away) and the other in the conventional horizontal position, we *ought* to be able to place one of the other three pieces with its oblique edge against the irregular piece, to fit exactly, and to continue the vertical arm of the angle downwards; also we *ought* to be able to fit another piece to continue the horizontal arm of the angle, in the same way. (The last piece may be horizontal or vertical according to the way in which the first piece was put down.)

In the case of the other problem, if the deviation were due to the combined influence of Jupiter and Saturn, it would be possible, knowing the positions, distance, and masses of these planets, to calculate what the deviations due to their influence ought to be.

9. The fifth and last step consists in a return to actuality, to *test* whether the implied facts (those which *ought* to be present if the hypothesis is correct) are indeed present. In

the case of the first problem we should find that the pieces could be arranged as implied by the hypothesis, and the problem is therefore solved ; the thought process is complete. In the other case the deviations as *calculated* were found in fact *not* to coincide with the *observed* deviations, and therefore this hypothesis must be rejected. We must then return to stage three, or if necessary to stage two, to await a new hypothesis.

In actual fact, it occurred almost simultaneously to two mathematicians, Adams and Leverrier, that the deviations might be due to another planet beyond Uranus.

Upon this new hypothesis, stage four took the form of calculating from the observed deviations the position, distance, and mass of the planet which *ought* to produce just these deviations. Their calculations so nearly coincided that they were put to the *test* by astronomers ; they turned their telescopes on to the position in the heavens indicated—and confirmed the hypothesis ; Neptune was discovered.

10. Thus is completed the analysis of a complete act of thought—the essential intellectual business of the school. It is interesting to note that in his work, *Instinct, Intelligence, and Character*, Professor Godfrey H. Thomson suggests that even in tackling problems such as those cited above, or a geometrical ' rider,' we make use of a process of ' trial and error '; i.e. that the process may be interpreted in terms of Thorndike's Laws of Learning. But while it is true that we do ' try out ' a series of suggestions, the thoughtful tackling of problems as outlined above has certain *fundamental* differences from the process of ' trial and error ' as practised by a caged cat, or by a person who merely fumbles with a wire problem or the T problem. The first of these differences is the omission of stage two, the definition of the difficulty, the careful analysis of the facts of the situation. In the typical ' trial and error ' process, we simply *plunge* in, trying lines which thoughtful analysis would show to be impossible because they contradict the data, and even trying the same false lines over and over again, hardly realizing it. A second essential difference is the omission

of stage four ; in ' trial and error ' we do not stop to consider the probabilities of any given suggestion ; we simply go ahead and try them all impartially. And thirdly, the pure ' trial and error ' method, because it omits these analytical aspects, cannot give any guidance in similar problems, even if only slightly different.

It cannot be too strongly emphasized that if teachers are to fulfil their function of developing in the coming John Citizen the capacity for independent thought, they must themselves be very explicitly conscious of the phases of the thinking process. Only thus will they be able consistently to make use of every opportunity presented by the various subjects they teach to stimulate the children to thought, upon problems graded to their capacity ; and to be able to judge correctly how to give just that minimum of help necessary to ensure eventual success on the part of the children.

Furthermore, as will be explained later (Chapter Twelve), the transfer of this capacity for independent thought from the sphere in which it was developed to other spheres depends in a great measure upon the children's also being made explicitly aware of the main phases of the process of thought and of the way in which it develops. And the children can acquire this awareness only if the teacher is completely at home with the whole process, and its variations and difficulties. Amongst these perhaps the more important are :

(*a*) the manner in which the awareness of the problem and the definition are often telescoped together. Thus if one is driving a car and engine trouble develops, the symptoms which make the driver aware of developing trouble are themselves a most important part of the definition, if correctly observed.

(*b*) Again it is often difficult to separate definition from specific suggestions. E.g., Cedar trees in Natal are observed almost invariably to lean over markedly from the vertical ; an obvious feature of definition is to note the direction of the leaning and it is almost impossible to avoid linking this at once with either the sun's position in relation to the tree under observation or the prevalent winds.

(*c*) The commonest difficulty is to avoid hasty jumping to suggested solutions without due definition.

At this point it is perhaps appropriate to make brief reference to the Noegenetic Laws as presented by Spearman. He claims for them fundamental importance in the process of cognition and other writers have concurred ; but after the most careful consideration the present writer cannot agree that these Noegenetic Laws are of much practical value to teachers. Thus, the first law, 'a person tends to know himself and items of his own experience,'[1] is so obvious and general that, whatever its value from the metaphysical standpoint, it could only be supposed to be helpful in the solution of life's actual problems in the form of a basis for further laws. The second law, dealing with the 'eduction' of relations upon the perception of two objects (or other fundaments) undoubtedly draws attention to a very important aspect of the cognitive process. But it helps little if at all in the *guidance* of that process; and the discrimination of the different kinds of relations is certainly beyond the average undergraduate. Indeed the discrimination is so difficult that there is little certainty even in the categories offered by the experts in the analysis of Noegenesis. Thus we read that there are ten kinds of relations, viz., attribution, identity, time, space, cause, objectivity, conjunction, constitution, evidence, and likeness (or unlikeness).

But if we propose this analogy :

Key : lock as 57° : ?

the only relation which will enable us to supply the missing item is 'complementary' ; and this relation will not readily be included in any one of the ten kinds given.

Or again, consider the analogy :

North Pole : South Pole as Freedom : ?

If we educe the relation 'opposite,' it will assuredly lead us astray in supplying the missing item ; for here we have to do, not with simple 'oppositeness or unlikeness' but with polar opposites ; and only on this basis will we arrive at a satisfactory fourth term, say, 'observance of law.' Is it quite sound, then, to include this particular relation of 'polar opposites' in the general category of likeness (or unlikeness) ?

The third law, dealing with the eduction of correlates, is again a very important aspect of the cognitive process from the standpoint of the academic psychologist; but again it offers little guidance to the novice in directing that process.

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[1] *Psychology down the Ages.* Vol. II, p. 125.

Ideas, Knowledge, and Observation

11. The present writer remains convinced, therefore, that Dewey's analysis of thinking is of greater value to teachers in the guidance of the learning process than either Thorndike's Laws or those of Spearman. And he suggests that in all lessons whose aim is chiefly intellectual (i.e. apart from appreciation lessons and those devoted entirely to the practice of some skill) the effort should be made to handle the matter so that it presents, at the outset, a problem. This will not only arouse the curiosity and self-assertion of the pupils, but will be the initiation of a process of thought which should then be pursued through the lesson. It should, however, be noted that this suggestion cannot be made to apply to every half-hour period; one such period may include several short but complete processes of thought, more or less independent of one another (e.g. occasionally in arithmetic); on the other hand, one process of thought and its applications may spread over several periods (e.g. in geography sometimes).

Not only is this the means of developing the power of thought in a fairly wide variety of subjects, but also, if rightly handled, it should engender a sentiment of appreciation for this scientific approach to difficulties, transferable to *any* sphere of activity. But, apart from these general benefits, this method of approach and handling has the specific advantage of ensuring that the content of the lesson will be assimilated in the most satisfactory way.

Consider, by way of illustration, an arithmetic lesson, say, a first lesson on graphs to Standard Five. The content of such a lesson would naturally include the use of squared paper, axes and origin, scales, plotting of points, and the drawing of the graph. These facts might be explained to the children in logical sequence, and they might then proceed to draw a graph under explicit directions from the teacher and produce a neat and correct result. On the other hand, they might be presented with a simple *verbal* description, of, say, the rise and fall of temperature in their town during the previous twenty-four hours, and invited to suggest how this might be represented pictorially, i.e. by drawing a line to show what occurred to the temperature (the problem). The first attempt would doubtless be a crude curved line indicating the rise and fall only in a very general way. But by questioning we could bring out the need of more precision (showing times and degrees), the most convenient place to show these (axes), and finally the importance of careful spacing (scales), and the convenience of squared paper. We should then give another verbal description and ask for an *accurate* drawing. This time the children would appreciate the need of *starting* with the squared paper, axes, scales, and careful plotting of points. This latter method has the advantage (besides promoting thought and therefore developing ability to think), firstly, that the material so treated forms a comprehensive whole, with conative unity, and is therefore more readily remembered ; and secondly, that only if presented in this way will the children gain a true idea of a graph.

12. This last point may be generalized into the statement that *true ideas* of any kind can be formed only if they arise out of a process of thought. Children, to whom the first graph is explained, and who then draw graphs by dictation, will get only a very vague idea of what the process really is ; it may be cleared up later by having to work out examples for themselves, but there is danger that even then they may proceed on mechanical lines and never realize that a graph is a pictorial way of showing how two sets of values vary in relation to each other. Other illustrations may be mentioned ; in each case the problem suggested seems the most natural one, but of course it is not the only one by means of which the idea could be presented.

(*a*) A true idea of the sphericity of the earth is not to be conveyed by showing oranges or even a globe ; it will arise out of the consideration of the problem of the cause of day and night. And in a similar way a true idea of the inclination of the earth's axis will be developed in the course of tackling the problem presented by the seasons.

(*b*) The idea of 'least common multiple' will be hazy and unreal unless it is developed in connection with the difficulty of finding the required common name in the addition or subtraction of harder fractions.

(*c*) A true idea of the build of any country will be conveyed if it forms part of the data necessary to answer the question: 'What is the climate of this country and to what extent is it suitable for human occupation?'

(*d*) The popular idea of 'Magna Carta' as the basis of English *freedom* generally carries a very false connotation of the word in italics; a true idea will be developed out of a consideration of the problem presented by the system of land tenure under the feudal regime.

(*e*) A real idea of the work and personality of Columbus will be derived from a reconstruction and consideration of the problem of navigation in the fifteenth century.

13. The considerations of the last two paragraphs may be extended still further; not only do we derive from a process of thought true ideas and groups of such ideas having conative unity, but also it is only when a subject is regularly treated in this way (i.e. by the presentation of, and grappling with, its problems) that the whole body of ideas so derived really deserves the name 'knowledge.' A body of ideas, which we may have memorized, or which we may look up in a book of reference, is to be regarded as 'information.' And while, of course, it is not denied that the latter may be, and often is, of great service, it is certainly not so serviceable as knowledge, when we are faced with a problem to solve. For the relevant knowledge, having been acquired in the course of tackling some similar problem, and so having formed associative links with problems of that type, is much more likely to be called to mind when required. And moreover, when once recalled, having again a larger conative unity, forming a comprehensive whole, its component parts will come to mind in a more orderly manner. By this is meant, not that they will be recalled in the order learned or read, but that the particular features especially

relevant to the problem in hand will emerge more readily into the focus of consciousness.

14. Finally, it should be realized that true observation operates only when we have some definite problem or question in mind, which the act of observation is to assist in solving ; either in the collecting and definition of data in the first stages of the process of thought, or in the testing of hypotheses in the final stages. This aspect comes out most clearly in science and nature study lessons. When, for instance, we hear an inexperienced teacher, at the outset of a nature study lesson, inviting her class to 'look at this and tell me what (or all !) you notice about it,' we may be sure that no real observation will follow. The children will notice a good many things, but their answers will all be simply isolated scraps—apropos of nothing. On the other hand, if the teacher either exhibits or recalls by a definite question some particular mode of behaviour (e.g. the way in which a frog leaps or the readiness with which the 'black-jack' fruit is distributed by clinging to passing objects), she may then say : 'Now look carefully and tell me how it is done.' This will elicit true observation.

We shall realize more fully this difference between 'looking at' and observing in the best sense if we think of a visit by two people to a museum, the one to have a general 'look round' and the other to gain some data for a particular problem or to test a hypothesis ; or again, if we think of the amazing observations of a man like Darwin—always with a problem in mind.

It is not intended to suggest that the facts which we have 'noticed' are never of any value to us ; but just as organized knowledge is more serviceable than mere information, so, and for precisely the same reasons (which we need not, therefore, repeat), our observations are likely to be infinitely more valuable to us than the scraps which we have 'noticed.'

Suggested topic for class discussion or debate.—The method of trial and error is involved in all learning and thinking.

Books which might be consulted :

J. Dewey, *How We Think.* 1910 ; new ed. 1933.
G. H. Thomson, *Instinct, Intelligence, and Character.* 1924 ; 2nd ed. 1932.

W. McDougall, *An Outline of Psychology* (1923 ; 4th ed. 1928) ; and *The Energies of Man* (1932).

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E. L. Thorndike, *Educational Psychology* (1903) ; and *Human Learning* (1931).

B. H. Bode, *Conflicting Psychologies of Learning.* 1929.

E. Rignano, *The Psychology of Reasoning.* Eng. trans. 1923.

R. W. Jepson, *Clear Thinking.* 1936.

D. E. M. Gardner, *Testing Results in the Infant School.*

C. R. Griffith, *Psychology applied to Teaching and Learning.* 1939.

C. Spearman, *Psychology down the Ages.* 1936.

CHAPTER XI

INTEREST AND ATTENTION

He holds him with his glittering eye—

. . . . .

He cannot choose but hear.

1. Probably no word is more frequently on the lips of those who discuss the details of the art and technique of teaching than 'interest'; and every tyro in the art quickly realizes that if he can arouse the interest of his class, though his lesson may not be entirely free from faults, at least that lesson has one obvious merit, and the knowledge, which it is doubtless part of the aim of the lesson to convey, will be the more effectively presented and retained.

Since the time of Rousseau the word 'interest' has found an ever-increasing place in educational literature. Herbart, in particular, concerned himself very deeply with the consideration of this matter and sought to give an exhaustive classification of children's interests; but the result was not very helpful to teachers, nor very satisfying, even to Herbart himself. The fact is that we should rather seek a comprehensive view of the nature of interest than an exhaustive classification. The first questions to be answered are: 'What exactly do we mean by interest?' and 'How is it to be aroused?'

2. The first of these questions may be answered at once. Few would be willing to dispute the categorical description given by Dewey: 'Interest is not necessarily pleasant; it impels to action.' This does not precisely answer our question, but it gives a lead, though in a direction which Dewey himself would probably repudiate! For he does not subscribe to the importance of the instincts in human psychology and is little impressed with the value of the emotions or ideals. But in view of all that has been said in previous chapters regarding the emotions as the motive forces of behaviour, this statement, 'it impels to

action,' clearly indicates the fundamental identity between interest and the emotions ; both are the mainsprings of action.

In fact, to say that we arouse a person's interest in an object is to say that we arouse one or more of that person's emotions in relation to that object. Consider the following illustration : one sees a child being ill treated in the street ; tender emotion is aroused and *constitutes our interest* in the situation, and in the child in particular. We remonstrate with the person responsible for the ill-treatment, and he tells us promptly to mind our own business ; anger is now aroused and heightens our interest in the situation. Next we notice a policeman in the distance; in the ordinary way he would arouse no particular interest (i.e. emotion)—unless perchance we have a guilty conscience ! On this occasion, however, we are at once interested since he will be able to interfere on behalf of the child ; through him the emotions (i.e. interest) aroused will be able to find satisfactory outlet in action.

In this description the word 'interest' has been used to apply to several different emotions : briefly then, we may say that interest is a generic term for the emotions, so long as these are considered, not in the abstract, as the affective aspect of the various instincts, but as definite experiences of a definite individual or group of persons.

3. With this view of the nature of interest in mind, the second question, 'How is interest to be aroused ?' will not present any difficulty.

(*a*) The most obvious and direct method will be to connect the object with one or other of the person's instincts. Thus the object may be made the cognitive aspect of one of the instincts as in the example above, where the child aroused the parental instinct of the onlooker ; or, to give an example more directly related to school work, when in the early stages of a lesson we present something which is partly familiar, and then endeavour to bring out by questioning some unfamiliar aspect, we are clearly making the matter the cognitive aspect of the instinct of curiosity - wonder. Another familiar illustration of the same type is provided by a newspaper placard announcing 'July Handicap—Result,' or 'Bungalow Murder Case—Verdict.'

The object may also be made the means to the attainment of the executive aspect of one of the instincts, as we saw in the case of the onlooker's interest in the policeman. Other familiar examples may be cited :

In Rousseau's *Émile*, an interest in reading was aroused in the boy by having a letter addressed to him, inviting him out to a party. On the first occasion the letter was read to him, but he was given to understand that on a future occasion he would be expected to discover the contents himself. This is perhaps a rather clumsy method ; in the case of most children the mastering of the letters and then small words in itself provides, at the right stage, a sufficient outlet for the instinct of self-assertion. In a case which came to my notice recently, a child, who had learned some of the sounds by the usual phonic method, was presented with a suitable reader, and on finding that he could make out the first few words himself, burst out in a great access of positive self-feeling : 'Mummy, I can read !' Naturally if the work is carefully graded, any other part of the school curriculum may equally well provide a similar outlet for joyous self-assertion—even the mastering of a problem in arithmetic ! Advertisers also provide us with familiar examples. For instance, when they display a particularly beautiful woman showing an exquisitely shaped leg, clad in So-and-so's special make of silk stocking, the implication is : 'If only I had those stockings I should look like that.' Or, when they show a champion tennis player bringing off a wonderful stroke with such-and-such a racquet, it is anticipated that an enthusiast for the game will feel : 'I could do that if only I had that racquet.'

It should be carefully noted, however, that in many of the examples cited above the interest aroused would be of a very fleeting nature. The fact is that since, in man, behaviour is most frequently actuated, not by simple instincts operating alone, but by the sentiments, we may expect to arouse a more enduring interest by connecting the object, in which we wish to arouse interest, with one or other of the person's sentiments. This is brought out by the last example: the advertisement in question would arouse no interest at all in a person who has not formed (or is not in the process of forming) a sentiment for tennis. The advertisement is not meant for him. This example thus brings into prominence another aspect which should be noted in this connection; when we speak of arousing interest by appealing to the instincts, we are permitted to generalize since the instincts are common to all members of the species; but if the more permanent interest arising from a sentiment is sought, then the appeal must necessarily be to *an individual* in whom that sentiment has been developed —another pointer in the direction of more individual work in schools. So much more permanent, in fact, is the interest associated with a sentiment that we use it for a slightly modified term; we speak of *an interest*.

(*b*) The second general method by which interest may be aroused is to make use again of primitive sympathy; i.e. show your own interest in your subject. It will be necessary, of course, to keep your own interest green and fresh, either by thinking out, or reading of, new and better methods of presenting it, or by pursuing its further reaches as part of your leisure occupations; preferably, of course, by both these means. In any case, if your subject has ceased to interest you, it will be impossible to arouse in the class as lively and lasting an interest as would otherwise be the case.

One further point deserves careful consideration. It has been said that many an 'interesting lesson' misses its mark and it is important to know why this is so. The fact is that in certain circumstances the interest (i.e. the emotion aroused) may distract attention from the idea or object upon which it should be concentrated. A gross example, of which it is difficult to think any teacher could be guilty, would be to present a simple number lesson to infant classes, using for the necessary concrete material, sweets. Obviously the children's attention would be distracted from the number aspect of the objects to the gustatory aspect. Less gross, and not infrequently committed, is the error of introducing pictures, experiments, or anecdotes which though interesting in themselves are not really relevant to the matter in hand, with the result that the children may be quite thrilled during the lesson but find themselves at the end with a most confused idea of what it was all about. Occasional flashes of such adventitious interest may be justifiable, but the teacher should be clearly aware of what he is doing and ready at the right moment to bring the class back to the real point he is making.

Attention

4. Attention is commonly thought of as the activity of close inspection or listening with a view to the clearer perception of the details of an object or a process. Thus Stout defines it as nothing but conation defining itself in cognition, and often it tends to be identified with the executive aspect of the instinct of curiosity-wonder. But it is a natural consequence of the view of interest, as a generic term for the emotions, that we should conceive of attention as a similar generic term for the executive aspect of the instinct which is aroused, or, more commonly, of the sentiment in operation. For example, in the case of a simple instinct, if a bull charges me, and I climb the nearest tree or get on the further side of a good wall, this *constitutes my attention* to the bull and the situation as a whole. Or if my sentiment for gardening is in operation, and I am digging a plot of ground deeply and thoroughly in preparation for the sowing of seeds of some choice variety of peas, this again constitutes my attention to the situation. Again, when any one says 'I shall attend to that presently,' he means, not that he will examine it presently, but that he will *act appropriately* in regard to it, and that, for the time being, it shall hold the focus of consciousness. The connection between interest and attention, therefore, is the relationship with which we are already familiar between emotion and action: all activity is emotion-prompted. Hence the empirical law in teaching, 'Arouse interest and you will secure attention,' finds here its justification and explanation.

It may seem that this effort to broaden the conception of attention is purely a matter of academic hair-splitting. It has, however, an important practical bearing for the teacher, inasmuch as the identification of attention with cognition is too closely bound up with the idea of education in terms of sitting still in rows and passively absorbing the three R's. In the schools of to-morrow the children will, to an ever-increasing extent, attend in and through activities, and the actual manipulation of materials ; and this development may be facilitated if we recognize the fuller meaning of attention.

5. Attention is generally described as falling into three fairly clearly defined types, usually spoken of as (*a*) primary passive or immediate, (*b*) active or mediate, and (*c*) secondary passive. In the light of the above discussion of the nature of interest and attention, these three types of attention would be distinguished as follows :

(*a*) Primary passive attention : when a primary emotion or simple combination of primary emotions (e.g. awe, i.e. fear and wonder) is directly aroused, we have this type of attention. By way of illustration think of (i) a hungry person who sees food at hand ; (ii) a person who awakes at night and hears a scraping sound at the window, or sees a bright circle of light appear on the wall ; (iii) a person who suddenly sees a child in grave danger. In each case the person attends immediately : (i) he takes up the food and begins to eat, or at any rate he makes inquiries with a view to that consummation ; (ii) he jumps out of bed to investigate ; (iii) he hastens to avert the danger in any possible way. In each case the interest aroused, and the attention, are relatively fleeting, and the attention, though not necessarily performed without physical or mental effort, follows spontaneously, without any *effort of will to decide whether to respond or not*, and to sustain the action as long as may be necessary to achieve the object in view.

(*b*) Active or mediate attention : the stock example in this case is attention to some form of work or study which is not in itself attractive and does not have any direct connection with any instinct or sentiment, but which is performed merely as a means to an end. This type certainly requires much effort, especially effort of will required to *initiate* a response and to *persevere* with that response ; and with the best of intentions this type of attention cannot be long sustained. In this case, the attention may be described as forced, either by fear of the consequences of neglect, or by deliberately linking the matter artificially on to some existing sentiment. Such would be the case, for example, if a young man sought to pursue a distasteful course of study or line of work to please a parent ; i.e. by linking the study artificially to the sentiment of love for his parent. Although obviously not a satisfactory type of attention, this is often a 'transition' type leading on to the third.

(*c*) Secondary passive attention : an instance of my own may serve here. At one stage in my career an elementary study in economics became necessary as part of a course in banking which I was then pursuing ; it seemed to have little bearing on my work, and it called for active attention as described above. Although not directly connected with my work, however, it was presently found to throw some light on some of life's problems ; my curiosity was aroused ; it became also a means of self-assertion in the effort to cope with the problems referred to. In short, the economics gradually became itself the centre of a sentiment and, as it did so, attention gradually passed into this third, secondary passive type, calling for effort indeed, but no longer strained and distasteful effort. The sentiment has steadily developed until, at the present time, the study of economics, though still requiring effort, is a pleasure. A similar history might be related in connection with other studies, and in order to appreciate fully the significance of the emergence of this type of attention, the reader is invited to consider the history of his own studies in different subjects. In each case the development of a sentiment will be found to be a preliminary to the exercise of secondary passive attention.

For those who have read something of the Herbartian psychology, it may be pointed out that his 'apperception mass' is equivalent to our term 'sentiment.' Believing in idea-force instead of emotional drive, Herbart naturally thought in terms of organized groups of ideas (i.e. apperception masses) rather than of organized groups of emotional dispositions (i.e. sentiments). Similarly his 'many-sided interest' as the basis of character is seen to be equivalent to the formation of that hierarchy of sentiments in terms of which we have described the character.

Suggested topic for class discussion or debate.—Attention is activity rather than listening or looking.

Books which might be consulted :

William James, *Principles of Psychology.* 1890.
J. Dewey, *Interest and Effort in Education* (1913), and *Schools of To-morrow* (1915).
W. McDougall, *Outline of Psychology.* 1923 ; 4th ed. 1928.
H. Caldwell Cook, *The Play Way.* 1917.
P. Sandiford, *Educational Psychology.* 1928.
B. H. Bode, *Modern Educational Theories.* 1927.
T. A. Ribot, *Physiologie et psychologie de l'attention.* 1906.
H. A. Reyburn, *An Introduction to Psychology.* 1925.
G. F. Stout, *A Manual of Psychology.* 1887 ; 4th ed. rev. 1929.
A. G. and E. H. Hughes, *Learning and Teaching.* 1937.
C. R. Griffith, *Psychology applied to Teaching and Learning.* 1939.
E. R. Boyce, *Play in the Infants' School.* 1938.

CHAPTER XII

HABIT

Lest one good custom should corrupt the world.

1. It is generally admitted that 70 per cent. or more of our total behaviour could fairly be described as habitual ; i.e. behaviour which is performed without thought or attention on our part and with little if any emotion. Can such behaviour be brought under the general conception that all behaviour is ultimately traceable to the instincts and is emotion-prompted ?

In order to answer this question it is necessary to consider the origin of our habits. In the first place we should recollect the contrast between the instincts of, say, the chick and the child ; the former are found to be very definite and specific responses to a definite set of situations ; the latter, on the other hand, we find to be very much lacking in this definiteness and consequently very highly modifiable. The effect of this again is twofold : (*a*) it provides for adaptation to new and variable conditions, and therefore progress is made possible ; (*b*) it makes the young child's actions at first very ineffective and laborious, requiring his whole attention, i.e. holding the focus of consciousness. But if a given situation is presented with any frequency, by degrees the child's reaction to it becomes more and more effective, then more and more rapid and less laborious, until ultimately it becomes quite mechanical—i.e. performed without any attention. In fact it may be said that ultimately such a reaction is better performed in the *absence of attention* ; e.g. the movements of the fingers involved in writing are certainly not facilitated by our attention to them, nor are the movements of the limbs in walking. When this stage is reached, we describe the action as *habitual*.

2. Thus, whereas in the chick each instinct has as a rule one specific response, in man we may find a number of different responses, developed through experience and

varying according to the circumstances in which the instinct is called into operation ; and if these varying sets of circumstances are repeated often enough in the individual's experience, all the responses will become habitual. In other words a group of habits may be developed, forming part of the executive aspect of a single instinct. But since, as we have seen, typically human behaviour springs rather from sentiments than directly from simple instincts, therefore we generally find habits developed in the service of, or as the expression of, our sentiments. Thus, for instance, a sentiment for cleanliness develops a set of habits of washing, bathing, teeth-cleansing, etc., at specific times of the day ; a sentiment for gardening develops another set of habits of digging, hoeing, watering, preparing seed-beds, etc. ; or a sentiment for books finds expression in a habit of covering them with brown paper in a certain way, of writing one's name, and date of purchase, at a certain place, and of making a methodical note in a book, kept for the purpose, of volumes which have been lent. It will be appreciated, of course, that these habitual responses are not the only actions arising from the sentiments in question ; in less usual circumstances, varying and unhabitual responses arise; in some cases the habitual responses form a far greater proportion of the total than in others ; more for instance in the case of the sentiment for cleanliness, than in the case of the sentiment for books.

Further, in regard to the emotional drive, it will be understood that just as the attention (i.e. the occupation of the focus of consciousness) is gradually reduced and eventually eliminated, so the necessary emotional drive is gradually reduced ; when once a reaction becomes habitual, the emotional drive is conserved for the unhabitual responses of the sentiment. Should, however, any obstruction to the performance of the habit arise, sufficient emotion is at once aroused to overcome the obstruction. If one is dressing, for instance, and a button or a tie proves refractory, enough positive self-feeling is aroused to settle the matter.

3. Two minor features may be noted at this point.

(*a*) Man has certain perfectly specific responses at birth, e.g. the blinking of the eyes when something is flicked before them or the sudden drawing in of the breath when cold strikes the skin. But these are called reflexes to differentiate them from habits, which are formed during the individual lifetime. When a habit is fully established, it is just as immediate and specific as a reflex, and some writers use the two terms as synonymous ; the distinction should, however, be kept clear (*pace* the behaviourists who would have the whole gamut of our behaviour to be ' conditioned reflexes ').

(*b*) Though a reaction may become quicker and less laborious, there is no guarantee that it will be the most effective reaction to the situation, but whatever effectiveness it has will be somewhat increased by the repetition.

4. We now turn to what is probably the most important aspect of this matter, viz. the part which habit plays in life.

(*a*) William James has referred to habit as the great fly-wheel of behaviour, and of society, and their most precious conservative agent. Just as in the movement of an engine there are dead points when the piston reaches the end of its stroke and stops momentarily before commencing the return stroke, so in the life of every person there are points of special difficulty, actions which, though necessary, are irksome. And just as the fly-wheel of an engine carries the movement over these dead points and eliminates the jerkiness which would otherwise be inevitable, so we may make use of habits to carry us over our irksome duties and difficulties. Consider, for example, the morning bath : if, each cold morning, we had to convince ourselves afresh of the hygienic and moral value of the bath, there would be enormous waste of time and emotional energy. Make a habit of it, and we go through with it each morning easily and without stopping to think. The writer has been assured by one whose work necessitates his rising at 6 a.m. both winter and summer, that getting out of bed costs him no effort even on the coldest mornings ; it has become entirely habitual. So, too, a teacher will do well to form a habit of marking sets of exercises at specific times, otherwise this process becomes a greatly increased burden. It may be added that just as a fly-wheel is difficult to set in motion at the outset (requiring a special mechanism for the purpose), so a habit may be difficult to form ; but, once formed, it repays a thousandfold the original energy spent in its formation.

(*b*) Really in continuation of the above idea, habits may be regarded as an essential factor in progress. Professor Whitehead has said that ' civilization advances by extending the number of important operations we can perform without thinking about them '—i.e. habitually. Consider, for example, the impossibility of our civilized life if we required just as much time and effort to dress, eat, write, spell, add, subtract, multiply, and divide, etc., as were required when first we laboriously performed these operations. The fact that all these, and a great many more, processes have been rendered habitual, liberates our emotional energies and our thought to enable us to forge ahead to ever new achievements. Mass production in industry is another aspect of the same advantage ; for the operative who concentrates on a very few activities naturally becomes much more expert and rapid in the performance of these activities, thus greatly speeding up production ; it should also improve the quality of the output, but unfortunately there is generally a tendency to speed up even beyond the pace which mass production would legitimately give, with the result that flaws in the material may pass unobserved. Also the monotony and incompleteness of each task militate against a desirable pride in the quality of the output.

(*c*) From another point of view, however, habits are the greatest bar to progress. This is true to some extent even in the sphere of habitual *actions* ; for it not infrequently happens that a habit which has been formed of doing a thing in one way precludes the adoption of an obviously superior method. Faulty habits in playing the pianoforte or in typing are common examples ; one has come across many students who, having thoroughly established habits of long multiplication and division, cannot be induced to substitute contracted methods when such would clearly be advantageous, and in some cases even the presence of a book of logarithm tables at hand cannot tempt them away from the 'good old methods.' The same applies to the handling of any tool or implement, from a pen or a plane to a golf-club or a gear-box.

But by far the more serious bar to progress is imposed by habits in the sphere of thought, i.e. by established customs and traditions. When an individual has adopted certain definite ideas in regard to any matter, it is generally most difficult to induce him to give reasonable consideration to any new ideas in that sphere. Nor does this apply with less force to the cultured and the scientific man than to the uneducated; each in his way is equally in danger of becoming 'set' in his ideas. It is said, for instance, that no one over forty years of age at the time accepted Harvey's theory of the circulation of the blood; it is well known that, though Galileo was anxious to demonstrate to the leaders of Christendom, by means of his telescope, the true relations between the earth and the other spheres of the solar system, they would not consent to look, and he was forced to 'curse, abjure, and forswear, his errors and heresies.' Over a hundred years ago, when the bill for the emancipation of slaves within the British Empire was before Parliament, the Duke of Wellington assured the members that if it were carried it would be necessary within two or three years to call out the army to shoot down the liberated slaves. The echoes of the storm of protest with which the theory of evolution was greeted have hardly yet died away, and even to-day one not infrequently hears, in regard to the rights of women, that 'the woman's place is in the home.' So the list might be extended indefinitely, and it remains true at the present time that the greatest obstacle to the adoption of reforms in the political, economic, hygienic, and domestic spheres is established theories and customs. It is little wonder that Rousseau would shield Émile from the formation of habits!

It has been said that the genius is the man who is able to see familiar objects in a non-habitual way. Thus James Watt perceived in the rattling lid of the kettle not merely an irritating noise to be stopped by tilting the lid, but a form of power. And the same may be said of the unknown genius who perceived the waterfall, not merely with fear, but again as power. It is a truism, whose truth it would be well to realize more fully, that 'habit is an excellent servant but a very bad master.'

5. Having now reviewed some of the more general considerations in regard to the subject of habit we turn to the more specific educational bearings; for, of course, despite what has been said of the dangers of habits, it will be obvious that we cannot dispense with them. We have here, in fact, an example of a very common paradox: the value of a thing when properly used is often proportionate to its danger when misused.

The first practical question which the teacher must needs consider in this connection is the physiological bases of habit, so far as it has been ascertained, with a view to understanding more fully the laws for habit formation. Here we touch definitely on the structure of the nervous system, that part of the body through which the mind functions,[1] which is the seat of consciousness, in its various modifications, and which provides the lines of communication between one part of the body and another. To carry out these functions the structural units of the nervous system, the cells, are specially modified, and are known as *neurones*. The characteristic feature of these neurones, the special modification which they have developed in relation to their function, is a (varying) number of outgrowths from the cell body by which communication is established with other neurones. In most cases one of these outgrowths takes the form of a slender but (relatively) very elongated thread, the axon, which terminates either in an arborescence or in some particular form of nerve-ending. The purpose of this axon is to put its neurone in communication with a distant neurone (by means of the arborescence), or else in communication with a sensory or effector end-organ such as the eye, or a muscle. Besides this elongated outgrowth there are one or more shorter outgrowths, usually very much branched. These put the neurone in communication with adjacent neurones, which have of course similar aborescent outgrowths ; but the arborescences of adjacent neurones do not actually join to form a continuous channel (as is the case, for instance, with the blood capillaries which connect an arteriole with its companion venule). Their contiguity may be likened to the juxtaposition of the two hands when brought very near to one another, palm to palm.

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[1] In this statement a definite position is assumed in regard to the much-disputed question of the relation between body and mind. Many, perhaps most, psychologists at the present time adopt a contrary view—that since consciousness as we know it manifests itself only through the brain, therefore the mind is nothing more than the physiological brain processes. In this connection, I consider the following incident illuminating. One of my children, when aged four, on hearing a reference in a story to a wind storm at sea, at once asked: 'But how can there be any wind on the sea? *There are no trees there.*' To her, wind manifested itself only through the swaying of trees; *ergo*, no trees, no wind!

As we saw in discussing Thorndike's Laws of Learning (Chapter Ten), the neurone theory postulated specific neural pathways as forming the channels of communication beteen the central nervous system and the sensory and motor end-organs ; and, in terms of that theory, habit formation (the Law of Exercise) meant the wearing down or stamping in of such neural pathways. But in terms of Weiss's theory that each muscle has its own ' excitation constitution ' and therefore responds only to its own peculiar ' excitation tone,' the essence of habit formation must lie in the transformation of a particular sensory stimulus into a specific ' excitation clang ' in the central nervous system, upon the emission of which a particular set of muscles (those corresponding to the constituent ' excitation tones ' of the clang) are actuated in a particular sequence.

Thus, for instance, one may suppose that upon the first occasion that a bright object is shown to a baby, the sensory (visual) stimulus sets up an excitation *noise* (i.e. a *haphazard mingling* of excitation tones) in the central nervous system, and this results in the random movements of arms, legs, head, etc., generally observed on such an occasion. By degrees, however, and by a process not yet understood (unless, with Thorndike, we can suppose that the pleasure of success, when the object is grasped, in some way sets up reverberations of the excitation tones corresponding to the arm muscles), the desirable excitation tones are selected and eventually the correct clang, for putting out the hand and grasping, results immediately from the particular visual stimulus in question. When this stage is reached, we say that a habit has been formed. Thus habit formation involves, on the physiological side, first the selection of certain excitation tones and then, by frequent repetition in practice, their ultimate combination into a clang which actuates the necessary muscles in the required order and with the required degree of force in contraction.

6. How, in the light of this theory, may we interpret the empirical laws for habit formation enunciated by William James in his celebrated chapter on Habit?

(*a*) The first of these laws stated that the new habit must be launched with enthusiasm; and universal experience attests the truth of this statement. Enthusiasm implies, of course, the powerful arousal of some or other emotional drives in support of the desired habit, and it is necessary, in order to sustain the efforts to achieve the correct reactions during the stage when the corresponding excitation tones are being selected, under the influence and guidance of success and failure. In so far as the teaching of some new activity to children is concerned, this law means that every effort should be made at the outset to arouse the interest of the children (by the methods suggested in Chapter Eleven) in the new activity to be taught, whether it be a new letter to be formed, a table to be learned, or perhaps a Latin conjugation to be memorized. A caution is necessary, however, in regard to the perseverance. If the practice is continued after the children are fatigued, or have temporarily lost interest and are bored, they will be indifferent to the success or failure of their efforts, and the law of effect will cease to operate. Perseverance in such a case is doing no good and may be doing actual harm since, when the child is indifferent to the result, he may, if forced to go on, repeat a faulty response without any effort to remedy it, thus tending to establish an unsatisfactory excitation clang.

(*b*) The second law stated that great care must be taken from the beginning to get as nearly as possible the *right* reaction and to maintain it with as little deviation from the standard as possible ; for every faulty response means the selection of a wrong excitation tone, for the purpose in hand. This means that a correct model must be set before the children, and that no considerations of time should be allowed to interfere, during the formative stage of the habit ; for haste probably results in a faulty reaction. It is also true that dawdling and idling are very liable to produce a faulty reaction. What is required is an unhurried, but businesslike and earnest, repetition.

(*c*) It is sometimes necessary to break a bad habit in a child or in oneself. Simple and sheer resistance is often very difficult and sometimes very inadvisable. For it will be remembered that a habit is part of the conative aspect of some instinct or sentiment, and the effort to prevent this particular outlet may result in its reappearance in some even less desirable form, as will be explained subsequently in dealing with the unconscious motive. The endeavour should be made to discover from what instinct or sentiment the habit springs, and to provide if possible a more suitable outlet for the urge along some associated channel. In some cases, such as cigarette smoking, the habit was originally an outlet for self-assertion, but later gains a hold for physiological reasons, that is, for the effect of the narcotic drug on the nervous system. In this case, when the person concerned fully understands the position, probably a sheer break is the best method—eased perhaps by carrying a small packet of raisins in the pocket ! But clearly the true remedy in this matter is to cease from making smoking the special prerogative of grown-ups and therefore an alluring channel for self-assertion to adolescent boys and girls. If the accepted general attitude was simply that ' any fool can smoke ' there would probably be far less smoking amongst boys and girls than there is now ; in fact, this position is recognized in some quarters, for official permission has recently been granted to naval cadets and boys embarked to smoke openly.

A very important and instructive sidelight on the whole question of the part played by habit in education and in everyday life has emerged in recent years from the facts now being collected by child-guidance clinics and private practitioners dealing with maladjustments in children's behaviour. It has been found in a considerable number of cases, far too numerous to be written off as merely aberrations resulting from highly specific and peculiar conditions, that children who have formed ' clean habits ' (that is, habitual control of the anal and urethral sphincter muscles) by the age of two years or less, have nevertheless at the age of five or six years, or even later, relapsed into enuresis or faecal incontinence of a persistent and intractable type.

This evidence tends to re-emphasize the fact that, while habit formation undoubtedly is important, the education and general development of the individual depends, in the final analysis, on the adequate adjustment of the primary emotional forces, that is, on the formation of sentiments and the organization of these into a more or less harmonious hierarchy.

It would seem probable that when clean habits are established by persevering drill at an early age they lack the necessary basis of adequate sentiment formation ; consequently it depends on the subsequent experience of the individual child concerned, whether suitable sentiments are formed to serve as a basis for more stabilized habits or whether, in the event of maladjustments in the emotional development (for example, the formation of a sentiment of hatred for a parent), the habits already formed simply break down, being disrupted by contrary emotional drives. Incidentally, these cases also tend to establish the fact previously referred to that habits are normally channels through which sentiments find suitable expression.

The Transfer of Training

The question here at issue is the extent, if any, to which habits developed in one sphere of life are transferable to other spheres. This aspect is bound up with what is known as the Formal Discipline Theory ; a theory which is usually associated with the name of John Locke, but which has in fact even more ancient and august backing, since it is founded ultimately on the Faculty Psychology of Aristotle.[1] The basis of the theory is that the mind is composed of a number of separate 'faculties,' e.g. a faculty of memory, of concentration, of wit, of determination, of reasoning, and so on—the number of separate faculties, if one is to judge by the literature on the subject, being very considerable. This easily led to the idea of training each of the separate faculties by suitable exercises and this in effect is what the formal disciplinarians proposed to do. In its crudest form, the theory stated that it does not matter *what* you teach, provided that it is rigidly logical and hard, and some of the disciples have even claimed quite seriously that if the boys hated the subject, so much the better. For then it would train not only the faculties of reasoning, concentration, memory, and orderliness, but also their faculties of determination and self-control. It was on these grounds chiefly that for centuries, Latin, Greek, and mathematics were made practically the sole subjects taught in the schools of Europe.

Theoretically, the psychological basis of the theory has long been dead, for Herbart showed that the mind is not a bundle of faculties, but operates as a unit. Nevertheless in many secondary schools to this day, the idea of 'training the mind' through Latin and mathematics persists, and may still be found lurking in many articles dealing with these subjects in educational periodicals. If the theory were correct, it would be competent, of course, to argue that chemistry and Zulu would serve the purpose equally well, and in fact, many entertaining articles have been developed along these lines. Probably the most effective thrust of this kind was dealt by Sir John Adams in a famous passage in which, in his own whimsical style, he showed that on the basis of formal discipline Fagin was one of the greatest of all educators. Yet, despite all this, the idea still does persist in actual practice—otherwise there would be no excuse for referring to it in a book of this type. Its persistence in this way rather suggests that there may be some element of truth in it, for although falsehood dies hard, only truth is immortal. If there is such an element of truth in the idea, what is it?

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[1] Aristotle himself was careful to emphasize that the 'faculties' do not function separately.

So long as the theory was stated in the general terms used in the preceding paragraphs, it was very difficult to put it to an experimental test in order to separate out the factors involved and determine the value of each. But as part of the general theory we have also the conception of the formation of generalized habits, e.g. a habit of punctuality, a habit of honesty, of neatness, and so on. It was held that such habits might be formed by some specialized training and would then operate in all other spheres of the individual's activities. On the formation and operation of such habits much experimental work has been done, and three well-known examples may here be cited since they bring out clearly the essential points.

(*a*) *Habit of Speed and Accuracy*. In this case a group of children were tested for speed and accuracy in multiplication, the results being assessed numerically. They were then given a period of intensive training in speed and accuracy in addition, resulting in a marked improvement so far as this operation was concerned. Finally, they were tested again in multiplication. It was found that there was some improvement in speed and accuracy in this operation, but not nearly as marked an improvement as there had been in addition. There had been, then, *some* transfer of training; and, on consideration, it is natural that there should be this partial transfer, for addition *forms an element* in the process of multiplication.

(*b*) *Habit of Neatness*. In this case there were two groups of children, A and B, as nearly as possible of equal ability, and both groups were assessed for neatness in their school work. Group A were then entrusted to a teacher in arithmetic instructed to insist on neatness, by purely coercive methods; group B, on the other hand, were encouraged to appreciate neatness for its own sake in relation to their arithmetic work; in both cases nothing was said about neatness in other subjects. At the end of the experiment the neatness of both groups was again assessed. Group A showed very marked improvement in arithmetic, but no noticeable improvement in other subjects. Group B showed not only improvement in arithmetic, but in all their work generally.

In experiment (*a*) there was some transference owing to the presence of a common element in the two processes, or spheres of activity. In experiment (*b*) there was transfer in one group, but no noticeable transfer in the other group. Was there then some common element in the two spheres (arithmetic and other work) for group B, but absent in the case of group A? On consideration, group B were encouraged to *appreciate* neatness; they therefore probably formed a *sentiment for neatness*, or possibly an *ideal of neatness*, which would serve as the necessary common element in the two spheres, for, as we saw above, a sentiment may express itself through separate habits in different spheres. Group A had formed a specific habit of neatness, unsupported by a sentiment; and in such a case the habit remains perfectly specific. It is even very dubious whether such a habit would long survive the removal of the coercion which had engendered it.

In so far, then, as the formal disciplinarians sought to develop a conscious recognition of, and *appreciation* of, logical reasoning, orderly arrangement, determination, concentration, and the rest, and in so far as they were successful in stimulating the formation of sentiments and ideals in relation to these qualities, there would be some transfer; the sentiments and ideals would operate in all spheres. But in so far as the boys were merely coerced into 'going through with' their Latin and Greek, there would be no transfer of any benefit to any other sphere of life whatsoever.

It will be clear that the formation of such sentiments and ideals constitutes an enlargement or development of the personality as a whole. Hence the ideals which are commonly developed in the course of training for certain careers (e.g. medical, clerical, or teaching) account for the existence of recognizable types of personalities in these professions.

(*c*) *Logical Reasoning.* In this third and more recent experiment three groups of equal ability were used in the endeavour to discover to what extent, and in what circumstances, the capacity for logical reasoning could be developed and transferred. The reasoning ability of all three groups was first measured on a series of very varied problems related to everyday life. One group then spent the training period in a course of algebra, presented in the traditional way ; a second group took a course in geometry, also presented in the traditional manner ; while the third group took the same course in geometry, but in this case every effort was made, during the presentation, to make perfectly explicit the essential features of logical reasoning as illustrated in the geometry, and to inculcate appreciation of the process. When all three groups were finally retested on a set of problems similar to the first series, it was found that whereas the first two groups showed only slight improvement, the third group had made very marked progress in general reasoning capacity.

The explanation would appear to be that in making the students explicitly aware of the main phases of the logical or thinking process, we tend to liberate this process from what would otherwise be an inevitable linkage with the subject-matter upon which it was being exercised. It acquires, as it were, independent standing and therefore capacity for independent functioning in other spheres. By way of illustration, consider what would be the effect of teaching a child to use the multiplication process exclusively in connection with say the 7 times table and in a mechanical way so that the *idea of multiplying* never was made explicit. In such circumstances, the child faced with a problem such as ' Mary, John, and Sam have 8 plums each, how many plums in all ? ' would almost inevitably proceed by repeated addition ; i.e. $8 + 8 + 8 = 24$ instead of $3 \times 8 = 24$. In order that the multiplication process might be transferable it would require to be dissociated from its habitual connection with 7 times ;

and this could be done by making explicit the multiplication process as such.

Suggested topic for class discussion or debate.—Is the conservative or the radical the more important element in human personality in securing progress?

Books which might be consulted:

D. A. Thom, *Everyday Problems of the Everyday Child*, Chap. I. 1927.
E. L. Thorndike, *Human Learning*. 1931.
C. Fox, *Educational Psychology*. 1925; rev. ed. 1935.
W. C. Bagley, *The Educative Process*. 1905.
James, Reyburn, Sandiford, and Stout, as for previous chapter.

CHAPTER XIII

MEMORY

> Nothing of him that doth fade,
> But doth suffer a sea-change
> Into something rich and strange.

1. Memory is a fundamental quality of mind or consciousness, and as with other such qualities, its precise nature is a difficult conception. It has been said that the most fundamental category of psychology is purposive striving ; but in a sense memory is even more fundamental, for as Bergson has pointed out, without memory, consciousness as we know it would not exist. For if we were conscious only of the moment-in-being, the fragment of time called ' the present,' there could be no continuity of consciousness:[1] and there could be no purpose, since this implies both prospective and retrospective reference. Without purpose and without continuity, consciousness would be something quite different from the consciousness of our experience. And certainly, without memory, there could be no perception ; each sensation would be an entirely isolated and meaningless occurrence.

Just as we use ' horme ' to signify the purposive aspect of consciousness in its widest sense (with ' conation ' to signify the *conscious* purposive striving—' horme ' in the solitary wasp laying up a store of provender for its unhatched young, ' conation ' in the ape striving for a banana), so we use ' mneme ' to signify memory in its widest and unconscious sense ; to signify the record, in the form and structure of an organism, of its past—a record which alone enables the organism to undergo constant change and yet maintain its identity. For example, we have seen that a man's character is the outcome of all his former reactions as recorded in his present habits, sentiments, and ideals ; wipe out this record and you wipe out the basis of his personal identity. This record of the past in form and structure is just as characteristic of the organism as it is characteristically absent from mere material things. Thus there is nothing (at present sensible to science)[1] in the form and structure of a molecule of common salt to indicate whether it was produced synthetically an hour ago in a laboratory or whether it has lain for thousands of years in the depths of the earth.

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[1] Unless indeed we could transcend time and live in the ' universal now.'

A good example of this mnemic aspect of living organisms is the recapitulation, in the developing embryo of any creature, of the evolutionary stages through which the species has passed in the course of the ages. Or again, the fact that each creature is equipped at birth with certain more or less specific instinctive responses to certain typical situations, is evidence that the fertilized ovum from which the organism was developed carries, somehow, a record of its racial past.[2]

2. Both memory, and its wider aspect mneme, imply the existence of some form or trace left by past experience. The nature of this trace is much in dispute ; naturally the behaviourists regard it simply as some modification of brain cells ; others, while not denying the probability of such modification of brain cells, feel that the essential trace is left in consciousness or mind itself. In any case, the precise nature of the trace cannot at present be determined. But we do know, and it constitutes the first piece of practical information about memory, that there are great individual differences in the effectiveness of the trace, or, as it is usually stated, in ' native retentiveness.'

3. Turning now to the practical aspects of the matter, from the point of view of education, we find that the *modus operandi* of memory is described in terms of the association theory. Thus the fundamental law, upon which the working of memory depends, is known as the ' Law of Association by Contiguity,' and it states that if two ideas or precepts have occupied the focus of consciousness either together or

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[1] If any such record were discovered, we should have to extend our conception of the realm of life.

[2] Or, if one accepts the doctrine of reincarnation, the record of personal experience in past lives.

in quick succession, then the recall or representation of one will tend to recall the other. From this it follows that in order to secure the recall of a given idea it is desirable to form with it as many associations as possible, so that if not one, then another, will serve as the cue for its recall. As subsidiary factors, the most obvious are the influence of frequency and recency on the efficacy of recall. We make use of the 'frequency' factor whenever we require children to repeat their spellings or their tables in order to fix them in the memory. And we make use of recency whenever we devote a period to 'revision,' or indulge in cramming, just prior to examinations. Another subsidiary factor of greater importance was pointed out by Professor Stout. The ideas or percepts will be more quickly and more firmly associated if they also have *conative unity*, i.e. if they form part of the same conative process. It is true that frequency alone is sufficient to establish an associative link, as has been repeatedly shown by experimenters : e.g. Pavlov showed that, by playing a particular note on a violin whenever food was given to a dog, he could afterwards produce the secretion of saliva simply by sounding the note. But conative unity will take the place of a good many repetitions. By way of illustration, suppose yourself holding a conversation with a friend on a railway station ; and that presently the conversation is interrupted by a very loud whistle. The conversation and the whistle would then occupy the focus of consciousness together, but in ordinary circumstances the recall of the conversation six months later would not recall the whistle. If, however, by making hearing difficult, the whistle had led to some serious misunderstanding, it would then form part of the total conversation-conation, and it would be recalled by recall of the conversation. A similar illustration from an actual experience may be given. Some years ago, whilst I was discussing this very point with a group of students, a motor car made a loud noise outside and caused a break in the discussion. I used it by way of illustration, and thus gave it conative unity with this particular discussion ; consequently, though I have scarcely once thought of that car (it was a 'crock' well known to us all) from that day to this, as I reached this point in my writing the idea of 'Leaping Lena' at once flashed into my mind.

This point has a definite bearing in connection with many aspects of school work where memory is required. For example, a particular set of facts in history may be 'learned' in a way by repeated reading or repetition of them as isolated 'facts.' But they will be far more effectively and permanently learned if, by questioning and discussion, the causal sequence is made clear; for in this case the facts gain conative unity in a process of thought aimed at reconstructing a certain sequence of past events.[1] The same would apply to a set of geographical facts; the size, build, mountain ranges, winds, rainfall, and rivers of a country may possibly be remembered if repeated often enough; but if all these facts are used in a process of thought, seeking to discover the suitability of the country for human habitation, they gain conative unity thereby and are then much more effectively remembered. Or again, the structural details of the heart will be much more effectively remembered if we think out the part which each plays in the proper working of the organ.

4. In another respect also the traditional associationist account of the *modus operandi* of memory was defective. It did indeed stress the importance of a third subsidiary factor in effective recall, one which was called vividness. But the exact nature of this vividness was not clearly analysed. It was certainly not mere vividness of the external stimulus. By way of illustration, consider a primitive hunter reposing by his camp-fire at night. As he sits, two points of light suddenly appear in the darkness beyond the range of his firelight; the firelight, considered simply as an external stimulus, has far greater vividness than the two points of light, but in the sense here implied the latter are incomparably more vivid to his consciousness. And if that night's camp were recalled at some future time, the two points of light in the surrounding darkness would be much more likely to be recalled than the firelight.

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[1] This process has been very aptly called 'synthetic memory.' See also Chapter Ten.

This example should make it clear that vividness in this sense implies the arousal of strong emotion ; and this is far from being simply ' one of the subsidiary factors ' in efficient recall. It is easily the most powerful influence in determining the readiness of the recall of any experience ; there is no doubt that we remember best those things which have most strongly aroused our emotions or most keenly interested us ; given that, we may dispense with frequency and recency altogether.

5. It follows that much of the experimental work on memory has been very much impaired by the fact that the material used, e.g. nonsense syllables, has been deliberately chosen to exclude interest or emotion ; the idea was that these are disturbing factors, whereas in reality they are the chief element in the process under investigation. However, if this point be understood, it would then be legitimate to exclude interest in order to inquire into the precise influence of some of the lesser factors. This, in effect, is what most memory experiments do for us, and some results of interest and value have been obtained.

(*a*) It has been proved that if we have, say, fifty minutes a week to devote to the repetition of tables or spellings, it is more advantageous to spread the practice ; to take ten minutes each day in preference to fifty minutes on one day, or twenty-five minutes on two days, or seventeen minutes on three days. The explanation is probably connected with fatigue or lapse of interest as suggested on page 146. Obviously, however, there is a limit to this spreading of the practice ; it would be absurd, for instance, in the case cited above, to take two minutes each hour of each day. For one thing, too great a proportion of the time would be absorbed in starting and stopping ; but even apart from this, such kaleidoscopic changes would be bewildering and irritating. The exact degree of spread which will be an optimum will depend partly on the subject also ; herein the teacher must use his discretion.

(*b*) It has been found that in memorizing poetry, if the poem is a fairly short one, it is more advantageous to use what is called the ' entire method ' in preference to the usual practice of learning verse by verse. The explanation in this case is that by the latter method undesirable associative links are formed between the end of a verse and the beginning of the *same* verse instead of the beginning of the next. If the poem is long, it should be divided into thought units, and the entire method should then be applied to each of these. This result should be accepted with some reserve, however, for the entire method does not seem to the child, in the early stages, to be giving satisfactory progress, and consequently he is apt to lose confidence in the plan. On the other hand, by the usual method, he quickly makes an impression, experiences positive self-feeling, and goes ahead with renewed vigour: 'Nothing succeeds like success.'

(*c*) Another point which is claimed as the result of experiment is that, after one set of facts has been learned, a short 'time for setting' should be allowed before attempting another set. In actual schoolroom procedure this would be applied (i) by giving a short application exercise after making each point in a series, rather than waiting until the end and giving a composite application on all the points together; and (ii) by allowing a brief respite between successive lessons.

(*d*) It has been demonstrated that individuals vary in the relative clearness with which they experience different types of imagery; some, for instance, have much clearer visual images than auditory or motor imagery; others have clearer auditory images, and so on. In practice this means that in presenting any matter to a class (in which there is probably a variety of types) we should appeal through as many senses as possible; through the eyes, by letting the children read the matter and by showing pictures or specimens; through the ears, by letting them read aloud or by verbal description; through the sense of touch and the motor sense, by letting them handle or do things, and by letting them write the matter down. The actual combination of these will, of course, depend on the matter being presented, and herein again the teacher must use his discretion.

6. One final point remains to be mentioned in connection with memory. There is some evidence to show that nothing is ever completely obliterated from the memory, however difficult it may be to recall in ordinary circumstances. For example, under hypnosis or in delirium, things which were apparently quite lost to memory are frequently recalled. There is the famous case in which an ignorant servant girl, during delirium, repeated pages of Hebrew scripture, in Hebrew, of which language she ordinarily knew nothing. It later transpired that years before she had been employed by a rabbi who was in the habit of reading the Hebrew scriptures aloud.

It would seem then that the real problem is not 'Why do we remember?' but 'Why do we forget?' This brings us to the next topic—the Unconscious Motive.

Suggested topic for class discussion or debate.—The commercially advertised methods of training the memory are without scientific foundation.

Books which might be consulted :

W. McDougall, *Outline of Psychology.* 1923 ; 4th ed. 1928.
Sir Percy Nunn, *Education, its Data and First Principles.* 1920 ; rev. ed. 1930.
D. Kennedy Fraser, *The Psychology of Education.* 1923.
E. L. Thorndike, *Human Learning.* 1931.
James, Reyburn, Sandiford, and Stout, as for Chapter Eleven.
A. G. and E. H. Hughes, *Learning and Teaching.* 1937.
C. R. Griffith, *Psychology applied to Teaching and Learning.* 1939.

CHAPTER XIV

THE UNCONSCIOUS MOTIVE

A house divided against itself cannot stand.

1. We enter now that part of our subject which is frequently referred to as the 'new psychology'; but it is new only in the sense that it is an aspect which has just recently been opened up. It is not new in any sense which would suggest that what has gone before is now obsolete, for it is a perfectly natural extension or outgrowth of the psychological principles outlined in the previous chapters; and, as is always the case when a new aspect of truth comes within our ken, it both illuminates, and is illuminated by, those principles.

This new aspect was opened up in Europe by the genius of Dr. Sigmund Freud,[1] and at about the same time in America by Dr. Morton Prince. The name of Freud has become associated with certain exaggerated views in regard to the omnipotence and the omnipresence of the sex instinct among the motives of human behaviour, but this should not blind us to the importance of the new aspect which he was largely instrumental in developing. He was dealing with cases of mental breakdown and mental disorder, and while in search of the cause of these, his attention was attracted by certain common phenomena which had hitherto been taken for granted,[2] namely, slips of the tongue, slips of the pen, mislaying and forgetting things. The commonly accepted explanations of these familiar occurrences in terms of fatigue, hurry, etc., Freud held to be insufficient; these conditions might indeed operate as general predisposing factors, but they could not account for the *precise form* which any particular slip of the tongue, or of the pen, might take. Because you are tired, you are doubtless more liable to make slips, but why just *that* slip? The suggestion of *mere chance* is naturally ruled out, since there can be no result without a cause, however difficult (or even impossible) it may be to trace.

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[1] Note, however, a forerunner in George Eliot: 'Watch your own speech, and notice how it is guided by your less conscious purposes.'

[2] Another instance of genius perceiving familiar objects in an *unhabitual* way.

2. Let us follow in the footsteps of Freud and consider some instances of such slips and mistakes:

(*a*) *Slips of the Tongue*

(i) Some years ago a person, with a slight excess of positive self-feeling in his self-sentiment, was elected president of a branch of a society having branches throughout the country; in the course of a brief speech, in appreciation of the honour conferred, he referred at least three times to his new role as 'President of the *Society*.'

(ii) A gentleman, of similar tendency, in making a speech before a Provincial Council, repeatedly addressed the Chair as 'Mr. Speaker.'

(iii) While travelling by train, we found ourselves in the same compartment with a young lady acquaintance, who was going, with obviously pleasurable anticipations, to stay with friends in the country. In the course of the more or less perfunctory conversation, which generally prevails on such occasions, she looked straight at my wife and addressed her as 'Richard'—and began to blush forthwith!

(iv) Freud tells of a certain president of the Reich, who was anticipating a very stormy and unpleasant session, winding up his opening address by formally declaring the 'session *closed*.'

(*b*) *Slips of the Pen*. Some years ago, when holding office in a society, the headquarters of which were situated at some considerable distance, I happened to hold rather markedly different opinions, as to the way in which certain local affairs should be conducted, from the president at headquarters. A somewhat acrimonious correspondence developed, in the course of which the president wrote, in reference to one of the matters in dispute, and concerning which some of us felt that full information had not been given: 'This point must not on any account be *understood*' (the last word being erased and 'misunderstood' substituted). Eventually, to save a split, I offered to withdraw entirely, but the majority of the local members, sharing my views, would not agree to this, and a dissolution became inevitable. By this time the letters from the president had become more than '*somewhat* acrimonious,' though always couched in the politest language; it was no surprise to me, however, when, in a final appeal, he wound up with 'Is there no hope, friend?'—but with 'r' omitted from the last word! Another very illuminating slip of the pen was supplied by one of my students in writing an answer to a question dealing with this part of the subject; intending to write the word 'psychologist,' she interchanged the first two letters!

(*c*) *Mislaying*. Freud gives in detail an interesting case in which a man received a small present from his mother-in-law, for whom, however, he had conceived a great dislike. He put the present aside and shortly afterwards was totally unable to find it. It remained lost for some months. Eventually his wife became ill, and the mother-in-law stepped into the breach so well and kindly that the man quite changed his opinion of her; and the next time he thought of the present, he remembered at once where he had put it carefully away.

(*d*) *Forgetting*. Most people could give many instances of the forgetting of small but rather irksome duties, e.g. forgetting to write a somewhat 'difficult' letter. My eldest daughter, at the present time, frequently 'forgets' to do her pianoforte practice; and I must confess to forgetting occasionally small commissions entrusted to me by my wife, which seem to me to involve unnecessary expense!

3. A close examination of these few examples reveals that in each instance there is a conflict of two motives—one, the conscious and overt intention of the moment, the other, an interfering motive, which in many cases the person concerned, on giving attention to the matter, or on having it pointed out to him, is quite ready to recognize and admit. In other cases, however, the existence of any such conflicting motive, if suggested to the person, is stoutly

denied, and moreover quite *sincerely* and *honestly* denied. In these instances it will be found that the conflicting and interfering motive is more or less seriously out of harmony with, or incompatible with, the idea of self—especially with that part of his larger self, which we have referred to as his ideals. As a result of this disharmony and incompatibility the person is unwilling to admit the existence of this undesirable motive even to himself, and more or less successfully excludes it from consciousness. The exclusion, however, is not deliberate ; it is, as it were, an act of omission, rather than of commission. Such exclusion from consciousness is referred to as *repression* ; and it will be as well to emphasize at once that such exclusion from consciousness clearly does not rob the undesirable motive of its driving force in actuating behaviour. Thus, for instance, in the first case quoted above, though the person might have denied the existence of (repressed) positive self-feeling at not having been elected president of the *society*, such emotion nevertheless found expression in the slip of the tongue noted.

4. Next, consider a few simple but definite cases of neurotic disorder.

(*a*) My eldest child, when aged about five and a half years, developed a persistent nightmare ; every night, for some weeks, she awoke crying and complaining of some painful dream. Reassuring words were of little avail ; she could be quieted only by being taken into her mother's bed. There were, at the time, two younger children, one nearly three years and the other a few months old. It seemed likely that positive self-feeling was being repressed ; doubtless, she resented the intrusion of the younger children, excluding her from the full attention of her mother ; but it was obviously expected of her by the social circle to show love and gentleness to the youngers, and not anger at the thwarting of her positive self-feeling. Therefore, as we saw when discussing the development of the idea of self, she tended to adopt the idea of herself as loving and gentle, and the anger and thwarted positive self-feeling were repressed—only to find outlet in the nightmares, which secured for her the full attention of the mother. At my suggestion, the situation was freely discussed with her, stress being laid on other means by which she could secure attention—by learning to read, for instance. The effect of the discussion was immediate; the nightmares ceased forthwith.

(*b*) My third child, very similar in disposition to her eldest sister, developed a facial habit spasm under very similar circumstances. On this occasion I took the opportunity, one afternoon when she was watching me carry out some small household repair, to tell her in a simple way the story of her sister's trouble as outlined above —without making any reference whatsoever to her case. As I did so I could see out of the corner of my eye the facial spasm working incessantly; but within a week it ceased entirely.

The two following cases are quoted from McDougall's *Outline of Abnormal Psychology* (1926).

(*a*) 'A clever, well-educated boy of nineteen years, a great athlete, was in training as a cadet in the flying corps. He had taken up the training with great enthusiasm. One day in running to the dining hall he fell and bruised his right shoulder. The bruise was only moderately severe. The arm was put in a sling for a few days and lo! when the sling was removed, the arm was in rigid contracture. The boy expressed the greatest keenness to go back to duty, and to go to the front as a fighting pilot. He stoutly denied that the flying had in any sense "got on his nerves" and that he had experienced any fear. Tactful investigation, however, brought out the fact that, shortly before the bruising, he had, in executing a daredevil stunt, come within an inch of crashing against a tall tower. Still he could not by any means be brought to admit any fear or any reluctance to return to duty; and the condition was very obstinate. I resorted to hypnosis, into which he readily passed. But when I insisted on his using the arm during hypnosis, there was manifested an acute conflict. The arm moved; but, instead of obeying my suggestions, it performed the most extraordinary contortions with tremendous energy. Very soon my "spell" was broken; the patient came suddenly out of hypnosis; and then, in place of his usual cheerful friendliness, displayed a fierce resentment, told me he hated me, etc. On the following day he was his usual cheerful friendly self; but he reported that, when he woke from sleep, he found his right arm interlaced among the bars at the head of his bed and had had the greatest difficulty in extricating it. These events were repeated with some variations. It was as though he were possessed by a devil.'[1]

(*b*) 'A young soldier was afflicted with a severe stutter. He had been very strictly brought up as a member of one of the minor religious sects which teaches that an oath is a great sin. In accordance with his training, he had carefully avoided all bad language, repressing that symbolic tendency to the use of strong language which seems to be natural to all of us under conditions of extreme vexation.

'At a trying moment of great excitement on the battlefield, he was buried by shell explosion, and at that moment, before he lost consciousness, he uttered some violent oaths. He came to with the stutter; and it persisted up to the moment when, in hypnosis, he was induced to relive the scene and recover the lost memory of the whole incident, including the oaths; whereupon the stutter completely and finally ceased.'[2]

5. Examination of these cases again shows in each case a conflict of motives. In each instance the repressed motives were a primary emotion—positive self-feeling, or fear, or lust—which was prompting behaviour incompatible with the ideals of the person concerned and therefore opposed by his self-sentiment.[3] But when repressed these motives retained their driving force, which was merely diverted through unconscious channels to find expression in a variety of neurotic symptoms. In each case, these symptoms were of such a nature as to secure satisfaction for the repressed primary emotion—or, at least, were calculated to secure such satisfaction. For example, in cases (*a*) and (*b*) the nightmare and the habit spasm secured attention; and in the other cases the symptoms secured protection from the dangers of the war. A second charac-

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[1] McDougall, op. cit. p. 251.

[2] Ibid. p. 278.

[3] The 'Super-ego' of the Freudian School.

teristic should also be noted ; in each case the symptoms made self-deception possible ; the satisfaction of the repressed urges could be secured, while at the same time the incompatibility with the self-sentiment could be cloaked, because the symptoms appeared to arise *in spite* of the individual, so that no blame could attach to him. The flying cadet was protected from going to the front by the contracture, which *apparently* was quite unconnected with his own attitude, and therefore his remaining in England was not incompatible with his self-sentiment. In fact, the contracture would probably have the added advantage of securing for him sympathy and attention ; and the conscious attitude in such cases was reflected in some such statement as this : 'If only my arm would get right, I'm longing to go'—uttered with perfect (conscious) sincerity.

It is worthy of note that one effect, in each case, is the preservation of the individual's self-respect, even at the cost of suffering and unhappiness. This is a further indication of the enormous importance of self-respect.

6. Just as primary emotions which prompt to actions incompatible with the self-sentiment may be repressed, so sentiments may also be formed which are similarly incompatible and therefore tend to be repressed. Such a repressed sentiment is spoken of as a *complex*, though naturally there is no hard-and-fast division between complexes and sentiments ; the degree of incompatibility naturally varies, producing varying degrees of repression and a steady gradation between sentiments and complexes.

As in the case of repressed primary emotions, so complexes by no means lose their driving force, but, denied normal expression on the conscious plane, they find outlet, along unconscious channels, in behaviour which is always irrational (though carefully *rationalized*) and generally undesirable. The following is a simple, partly hypothetical, but, with modifications, not uncommon type of complex which will serve to illustrate these points. A and B are mother and daughter, A having been a widow since B's childhood, but in moderately comfortable circumstances. B grew up to be a very attractive young woman both in appearance and in personality, but A, having suffered some disappointment in connection with older children, has sought to keep B for herself. B was discouraged from taking up any work for herself, or from mingling freely with young people of her own age, dances and card-parties being regarded as improper ; and as far as A could secure it, they have always taken their pleasures together. B's attitude has been a model of filial duty and love, so that in earlier years A's sentiment of love for B was a strong one, but dominated by positive self-feeling rather than by the tender emotion. Now when B is nearing middle age, and of course is still single, A is clearly realizing her own selfishness, and her sentiment for B becomes more and more tinged with remorse. This is naturally painful to her self-sentiment, and consequently A's sentiment of love for B is steadily being transformed into a *guilt complex*. At first the change expressed itself in a general querulousness towards B, but latterly it takes the form of wholly ridiculous and irrational charges against B, though made to appear very plausible to A herself—i.e. rationalized. Eventually A had to be placed in a mental hospital.

7. Just as we all, in the course of our experience, form innumerable and varied sentiments, so few indeed of us are entirely free from complexes, more or less serious and warping in their effects on our behaviour. These complexes are naturally exceedingly varied, but some of the more conspicuous may be briefly described :

(*a*) *Jealousy Complex*. This form arises in general where jealousy has been aroused without substantial and reasonable grounds ; for if there were such, the jealousy would be regarded by most people as legitimate and compatible with the self-sentiment, and therefore would not be repressed : we might have a sentiment of jealousy, but not a complex. A jealousy complex generally gives rise to outwardly effusive congratulations and professions of goodwill, coupled with biting criticism behind the other's back. This criticism is notable in two ways : (i) it is generally directed *not* against those aspects of behaviour or fortunate circumstances which have aroused the jealousy, but against other, and as a rule, very trivial matters; (ii) it is generally uttered in a pious, more-in-sorrow-than-in-anger tone. A sentiment of jealousy by contrast generally gives rise to lashing criticism, straight to the point.

(*b*) *Guilt Complex*. Besides the personal type of guilt complex noted above, we sometimes find cases where shame and remorse in regard to a particular type of wrong-doing have been repressed. In that case we have a guilt complex about that type of wrong-doing, which expresses itself as a rule in very harsh condemnations of that and associated faults. It is for this reason that we often hear it said that a man is hardest on his own faults in other people ; and it will be noted that the truly great and good characters are ever slow to condemn others. Whatever may be its value as a religious principle, 'Judge not, that ye be not judged' is very sound psychology.

(*c*) *Complex regarding a Bodily Defect*. This type was well illustrated in the case of the poet Byron in regard to his lameness. It produces an extreme and unreasonable sensitiveness, coupled with a strong tendency to compensatory day-dreaming. Byron's romantic heroes were for the most part glorified representations of himself. This type is also well illustrated in the story of the woman of unusually ample proportions who drove up to a filling station and asked to be supplied with a quart of oil. The attendant innocently asked 'What sort ? Heavy ? '—to which she hotly replied : 'Look here, young man, don't you get fresh with me ! '

(*d*) *Inferiority Complex*. This is not, as is often supposed, an insufficient belief in oneself ; that is due to a comparative lack of positive self-feeling in the self-sentiment, as described in Chapter Six ; it does not involve repression. The inferiority complex, on the contrary, generally occurs in persons with rather an excess of positive self-feeling, resulting in an ungenerous attitude towards greatness in others ; both this and the excessive positive self-feeling are felt to be incompatible with the idea of self, and the repression of both results in the inferiority complex. It results in an extraordinary readiness to see slurs where none is intended and excess of zeal in defending oneself, one's ideas, one's family, or nation.

(*e*) A form of complex, not specifically named, but of special importance to teachers, is one which may be formed about a particular school subject. It is generally the result of having been made to ' feel a fool ' at this subject, especially during the early stages. This feeling is incompatible with the self-sentiment and is therefore repressed ; and since the subject tends to recall this distasteful and repressed feeling to consciousness, it also tends to be driven from consciousness. Thus, while the arousal of emotion in the ordinary way is synonymous with the arousal of interest and leads to attention, the arousal of *repressed* emotion creates what might be called *negative* interest or revulsion of feeling, accompanied by unwillingness to attend to the matter. This type of complex usually expresses itself in such vehement exclamations as : ' I *hate* arithmetic, or Latin, etc.' Further, just as the arousal of strong emotion or interest is the principal factor in securing effective recall, so this repressed emotion is the principal causative agent in forgetting. The importance of this matter can hardly be over-emphasized. For this reason, if for no other, a teacher should never expose a child to ridicule in connection with his work ; it is inexcusable. For a splendid example of the manner in which such a complex operates to retard progress, and of the way in which it may be cleared up, the reader is referred to Homer Lane, *Talks to Parents and Teachers* (1928), p. 179.

8. *Mental Hygiene*

(*a*) It is to be noted that an emotional urge, however antisocial and undesirable in its tendency, will not produce a neurotic disorder, unless it is also incompatible with the self-sentiment and therefore repressed. Thus, for instance, if the flying-cadet after his narrow escape had admitted to himself his fear, and if, without incompatibility with his self-sentiment, he had deliberately malingered in order to escape further flying perils, his behaviour would have been undesirable and antisocial, but there would have been no neurosis. Technically, he would have been ' associated,' but not 'socially adjusted.' As it was, he was not associated—his fear was 'dissociated'—and, on this insecure foundation, he attempted to build his social adjustment.

In the same way, if the child in case (*a*) had openly resented the intrusion of her younger sisters, if she had not tried to live up to the idea of her self, taken over from her social circle, she would doubtless have appeared spiteful and unkind, but there would have been no nightmares.

(*b*) It is further to be noted that, if we are to make any progress along paths of culture and civilization, some conflict between the self-sentiment and primary emotional promptings is inevitable; and even a certain amount of deliberate suppression. But again there will be no neurosis so long as the undesirable promptings are squarely faced and recognized for what they are: they then expend their force on the conscious plane, or 'are dynamic to the decision' which we take. True, they may make it much harder to come to a right decision and to carry it out, once reached; but this is infinitely preferable to turning them adrift in the unconscious, to find outlet as best they can in neurotic symptoms which are very liable to wreck both the individual happiness and the social efficiency of the person concerned. Dissociated in the unconscious, they are freed from all controlling influence of the self-sentiment, and therefore their effects are quite incalculable; a social adjustment built on such insecure foundations is liable to break down at a critical moment: it is therefore dangerous. An obviously crumbling bridge is far less dangerous to the community than one which appears safe, but which is really insecure.

(*c*) But, while deliberate suppression is sometimes inevitable, the best line to pursue whenever possible is to redirect the undesirable promptings into desirable channels—or, as it is called, to *sublimate* them. The process of such sublimation is no other than that process of the integration of emotional forces which we saw to be the very essence of the development of character. Thus, to refer again to the case of the flying-cadet: his repressed fear might have been squarely faced, combined with positive self-feeling, to make him a much more *cautious* pilot for the future ; in this way his fear would have been put to good work—repressed, it was simply ruinous. Fear, again, may be sublimated by integration with wonder, to give awe ; or with wonder and negative self-feeling, to give reverence. Anger, as we have seen, may be sublimated by integration with the tender emotion to give righteous indignation, or it may be suffused with the self-sentiment as a whole to give temporarily an enhanced drive. The integrations (and therefore the sublimation) of the sex urge have already been fully noted.

This sublimation has been described very aptly by Dr. Burt as ‘ long-circuiting the instinct to make it produce light instead of heat ’ ; and by Professor L. P. Jacks thus : ‘ To devise for education a form into which the sex urge of human beings shall enter as a vitalizing element, no longer shunned as a poison or bludgeoned as an enemy, but welcomed and given a place among the driving forces of high culture ’—tending, in fact, to the realization of the spiritual oneness of all.

In view of the above outline of the forces which may play in the realm of the unconscious, the dynamics of the whole personality may now be summarized in diagrammatic form, as follows :

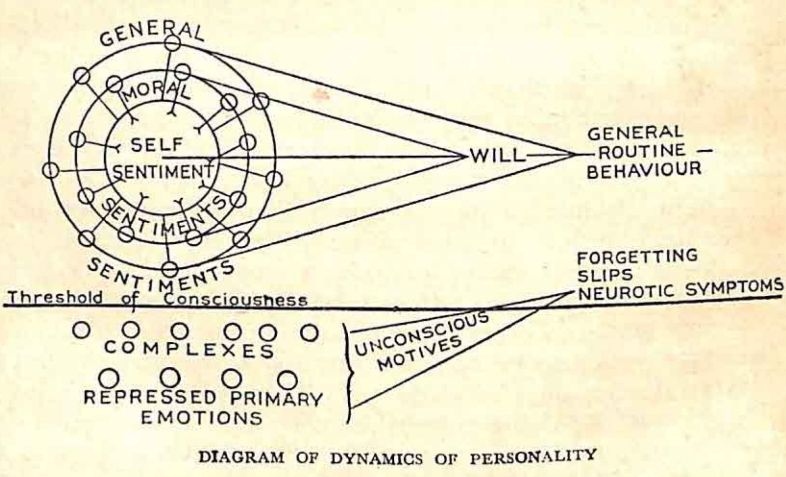

DIAGRAM OF DYNAMICS OF PERSONALITY

Suggested topic for class discussion or debate.—In the average individual, unconscious motives play so important a part that the principal role of the intelligence is that of manufacturing ' reasons,' *ex post facto.*

Books which might be consulted :

S. Freud, *Introductory Lectures on Psycho-analysis.* Eng. trans. 1922.
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CHAPTER XV

UNCONSCIOUS MOTIVES IN CHILDREN

> Cleanse the stuff'd bosom of that perilous stuff,
> Which weighs upon the heart.

1. In the preceding chapter our aim has been to give, in simple outline, the main facts in regard to the sphere of the unconscious generally, i.e. mainly as found in adults. It remains, before leaving this aspect, to consider it briefly with special reference to children. It should be noted, however, that only such manifestations of unconscious motives will be considered as may be found in any average group of children in an ordinary school.

In the first place it should be observed that, whereas in adults the repressing force is almost always the self-sentiment operating in support of the associated ideals, in children it is often simply the pressure exerted by authority and by external reality. This is particularly so during the earlier years, while the self-sentiment is developing in a somewhat rudimentary manner. It may be felt that in a civilized community the force of adult and social authority tends somewhat to diminish as compared with the hard and rigid conditions under which primitive children are brought up; but this view should not be too readily accepted, for while it is true that, in certain spheres of action, the force of tribal authority is very rigid, there is also, outside those spheres, a corresponding laxity. In any case, it will not be doubted that amongst civilized peoples adjustment to reality presents much greater difficulty to the child on account of the enormous complexity of civilized conditions. Familiar examples of this complexity are presented by the intricacies of civilized clothing and household utensils as contrasted with their simplicity or absence among primitive people; by the innumerable objects about our homes and streets, the gift of science, which are entirely unintelligible to children; and the very fact that our social sanctions are less rigid and specific is an aspect of reality, which at first is bewildering to children. But there are two aspects in particular which call for attention in this connection : (*a*) the formal and forbidding process of school education, as contrasted with the process of learning to hunt, or to tend the stock, or till the soil, by assisting the adults ; (*b*) the never-ending succession of new facts, new processes, new subjects, to be learned ; ' Hills peep o'er hills, and Alps on Alps arise '—often to the dismay of the child toiling up the slopes.

2. Both because of the nature of the repressing forces, and because the instinct of self-assertion is generally the dominant factor in the mental life of children, it is generally, in their case, positive self-feeling which is partially repressed and gives rise to the unconscious motives. These express themselves most frequently in day-dreaming, and most observers are agreed that within reasonable limits the day-dream is to be regarded as legitimate for children, easing, as it does, the process of their adjustment to reality and authority. If the pressure becomes too great, they escape temporarily into a world where authority and reality are in their own keeping, where they ' make the rules of the game ' and alter them at will. We have a delightful example of such an escape from authority by means of day-dream in A. A. Milne's verses, entitled *Disobedience.*

As an alternative to this line of escape, children also delight at times to gain their freedom in an imaginary defiance of reality, which accounts for their gleeful appreciation of nonsense-verses, such as those in *Alice in Wonderland* or *The Jumblies.*

> But we don't care a button ! we don't care a fig !
> In a sieve we'll go to sea !

This is such a relief from ' Don't care was made to care ' !

There is of course a danger that day-dreaming may pass the limit of a reasonable safety-valve and may become a *substitute* for all effort, on the part of the child, to adjust himself. There have been cases in which a child has been quite satisfied to lie in bed with some minor ailment (e.g. a headache—psychologically induced) and rule supreme, day after day, over some imaginary realm. Madame Montessori is opposed to fairy-tales for children mainly on the ground that they are prone enough to escape, with Peter Pan, into Fairyland to avoid the reality of growing up ; and there is much to be said for her alternative, which consists in so modifying the impact of authority and reality upon the children that the 'easing dope' of day-dreaming is unnecessary. On the other hand, since this is rather a counsel of perfection, most psychologists to-day hold that such fairy-tales as *Cinderella* and *The Ugly Duckling* (which are, of course, obvious day-dreams) help to bring into the consciousness of children their own more prevalent unconscious motives. That children do tend to 'read their own case' into the story is clearly shown in the example quoted on page 165, case (*b*) ; and, as in that instance, such bringing of the unconscious motive into the realm of consciousness always has the most salutary effects.

It may be added that, in the case of adults, day-dreams should generally be regarded as a waste of time and energy, which would be better spent in actively seeking a better adjustment both to, and *in*, the world of reality ; for, of course, reality is largely man-made—most strikingly so in the case of the present incredible fiasco in the economic sphere throughout the world. The ban on day-dreaming would not apply therefore to imaginative planning of ideal schemes for the readjustment of reality itself—provided that such schemes are within reasonable possibility of fulfilment.

3. Though day-dreaming is the commonest of the expressions of repressed positive self-feeling, it is by no means the only one, nor the most undesirable. Other quite common outlets are :

(*a*) Naughtiness, in the form of tantrums, or passive resistance. This not infrequently happens, for instance, in the case of a child whose school progress has for any reason been retarded, and who finds himself therefore in a class with children considerably younger than himself.[1] On the other hand, a girl of five years had begun to learn to read and write and do simple number work at home, when, after a while, the two children of a neighbour, of five and six years, were invited to join her. She resented their intrusion (because it deprived her of the full attention of her mother), but very largely repressed this feeling—the other children being clearly welcomed by the rest of the family. The result of this repression was occasional volcanic outbursts during school-time, the reason usually given being that the work set to *her* was too hard, as compared with that set to the others. But without doubt the commonest underlying cause of tantrums is more or less repressed jealousy of siblings. Florence Goodenough has published an inquiry into the incidence of anger in young children, and although she herself has not made explicit the following comparative figures, they are easily deduced from the tables she gives. Whereas in the case of the only child the average number of outbursts per day is ·83, in the case of the younger of two siblings it is 1·47 (an increase of 76 per cent); and in the case of the youngest of three siblings it is 1·58 (an increase of 90 per cent). It is unfortunate that the number of cases upon which these calculations are based is small—forty-five in all; but the figures are certainly striking.

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[1] It may be objected that in this, and in most of the other cases, we have thwarted, rather than repressed, positive self-feeling. But it will generally be found that the child is not conscious of the real motive actuating his behaviour; he always has some other 'reason'; hence there is at least partial repression.

(*b*) Senseless rowdyism. One often hears children soon after being released from school or other form of restraint indulging with apparent pleasure in sheer pandemonium —perhaps 'singing' in chorus, entirely devoid of either music or sense.

(*c*) A third frequent outlet is the application of nicknames—the more opprobrious the better—to teachers and other representatives of authority; also indulgence in jokes at their expense. The 'first of April' provides an annual opportunity to indulge, in this way, openly and with impunity; but it goes on all the year round *sub rosa*.

(*d*) The occurrence of smoking as an outlet for more or less repressed self-assertion has already been noted, and with it may be coupled swearing, and in some cases even the initial stages of drinking alcoholic beverages. In each case the remedy is the same: we must cease from making these practices appear in the eyes of children as the prerogatives of the 'Olympians.'

(*e*) Teasing and bullying are obvious and very undesirable forms of outlet, as is indicated by the fact that the bully is almost invariably an overgrown dunce. A milder form of this outlet is what is known at high schools as the 'new-poops' concert' and at the university as the 'ragging of freshers'—this, despite the various ingenious rationalizations of these practices.

(*f*) Amongst the more really serious forms is petty thieving. The fact that in very many cases this form is the outcome of an unconscious motive is proved by the testimony of many observers of delinquents to the effect that quite commonly the objects stolen are entirely useless to the petty thief. The behaviour, like that arising from unconscious motives generally, is irrational. He steals to gratify self-assertion, usually because of deprivation of normal manifestations of love at home, and then gives away the object as a further means to the same end.

(*g*) Finally, it may be noted that not infrequently minor ailments arise from repressed positive self-feeling, as an obvious means of securing attention. This form should be carefully distinguished from malingering, and it occurs especially where there is repressed jealousy of siblings—a form of jealousy so nearly universal that one is justified in suspecting repression when a child is said to 'show no jealousy of baby.'

4. After positive self-feeling, the emotion which is probably most often repressed in children is fear. In such cases one of the commonest symptoms is bravado[1] and recklessness, especially in situations where the actual danger is not very serious. For instance, it is not uncommon to hear a boy making voluble declarations of what he would do to So-and-so, as long as So-and-so is well out of the way and not likely to be encountered for some time. Similarly the nervous child, when his more fearless companions are up to some rather dangerous game, will occasionally try to

[1] 'Who's afraid of the Big Bad Wolf?'

'go one better' just to 'show that he is not afraid.' Another expression of repressed fear is cruelty, when the person feared is temporarily at the mercy of the other; especially if the latter can 'vent his spite' (his fear really) without being found out. He would probably boast in secret, however, and deceive himself with the belief that he was prompted by positive self-feeling. Tale-bearing is also very commonly the outcome of this form of repression; it is a means of diverting a danger, the fear of which has not been squarely faced, on to someone else. Occasionally, too, repressed fear of not being able to do as well as he would like, in an examination or other test, may give rise to some minor form of illness.

James referred to the cruelty of dismembering insects and other helpless creatures, as an outcome of curiosity, but it seems more likely to be the outcome of repressed positive self-feeling—a form of bullying. The stoning of frogs would either come under this heading, or that of repressed fear. One result of repressed curiosity seems to be well authenticated, however, namely, petty thieving as the outcome of repressed sex curiosity. It would seem as though the delinquent would steal the desired information, symbolically. The same repression may also take the form of extreme prudishness, and in younger children, of sporadic petulance, violence, unaccountable fears, or anxiety.

It will, without doubt, appear to readers inclined to the Freudian viewpoint, that the above account gives insufficient weight to the sex urges of young children. While it is not the writer's intention to question the play of such urges in early life, yet it has often seemed that much that is ascribed to sex springs in reality from self-assertion. In this connection it was interesting to note that at the New Education Fellowship Conference in South Africa (1934) Dr. C. W. Coulter stated that, although in his experience of girl delinquents sex misconduct was the commonest form, yet it was in the vast majority of cases prompted, not by the sex instinct *primarily*, but by the desire to 'get themselves across,' the desire for attention, i.e. by self-assertion. On the other hand, there can now be little doubt that masturbation and thumb-sucking are exceedingly common manifestations of infantile sex urges; so very common, in fact, that in most cases there is probably no justification for including them amongst the expressions of *repressed* motives.

The latter is a substitute for that realization of oneness with the mother achieved by actually taking her nipple into the mouth, and it is therefore more liable to occur where the child does not get full satisfaction at the breast—the word 'satisfaction' referring not primarily to the physical need of food, but to the emotional need of love, supplied by contact with the breast and the mother's arms. Hence if bottle-feeding is unavoidable, it should be made to resemble natural feeding as closely as possible in the manner in which the child is held. It is only when thumb-sucking persists after the age of five or six years that there is any likelihood of the existence of definite repression of the infantile sex motive from which it springs—a condition most liable to occur where the child has been made to feel, by word or deed, that the thumb-sucking is naughty or bad.

Masturbation also, in the child of two or three years, calls for little attention other than the obvious common-sense procedures of supplying him or her at all times with abundant material for interesting activities with the hands, and of giving plenty of active exercise for the limbs generally, so that he is really tired when put down to sleep. Even at this early age, and even in cases where parents and nurses have refrained from active interference or blame, there seem to be associated with masturbation, in the child's mind, some dim feelings of anxiety and guilt regarding the genitals—of very obscure origin, but possibly telepathic. And the masturbation is probably to be regarded as an expression of some need of reassurance, by handling and deriving pleasure, that the sex-organs are unimpaired, are not 'bad,' as he fears them to be. In this case also, if the practice persists after the age of six years or thereabouts, and especially if it appears to be compulsive in character, this is strong evidence of the presence of repression of the anxiety and guilt feelings, produced, in all probability, by blame, punishment, or even by warnings of physical and mental catastrophes of mysterious and terrifying character. It cannot be too widely known that masturbation, even of this compulsive type, is a symptom and not a cause of mental disorder, and requires the most wise and sympathetic treatment.

5. *Enuresis and Stammering*

These are among the less common and more complex expressions of unconscious motives in children. The latter, when it occurs as the result of what appears to be imitation, i.e. in a child when brought into contact with another stammerer, is almost certainly an expression simply of repressed positive self-feeling, the stammer appearing to his unconscious mind as an excellent means of attracting attention. In such cases it should yield readily if it is understood and steps are taken to give adequate attention, and opportunities for self-assertion in other directions. In other cases it is the result of more deep-seated conflict, involving partly the above simple motive, but also, and more important, (*a*) the repression of aggressive fantasies, usually against parents or other persons in authority whom the child is manifestly expected to love and respect; and (*b*) the repression of anxiety regarding the possibility of failure to please or satisfy the parents in the discharge of social or scholastic obligations. It follows that phonetic work, involving the repetition of jingles, which helps to give confidence and win the approbation of parents and teachers, will be helpful in overcoming the disorder, provided that the unconscious motive is not predominantly the simple urge to attract attention by means of the stammer, or the desire to score off the parent. But no general prescription can be given; each case must be treated as *sui generis*.

Enuresis, too, is generally highly complex in its causation; but in this case the more frequent factors in the unconscious motive are repressed hatred and aggression directed against the parents (the bed-wetting being a means of punishing them), or repressed guilt and anxiety regarding the genitals and the excretions (the enuresis in this case being a throwing off of the badness within). In either case the futility of punishment is obvious, since in the first place it can only add to the hatred and so enhance the real motive for the enuresis ; and in the second case it satisfies an inward demand for punishment as an expiation of the sense of guilt. If, as not infrequently happens, both motives are present, punishment will only the more certainly be harmful, either increasing the enuresis, or perhaps stopping it only to give place to more deeply seated symptoms, threatening even more the disruption of the personality, and the child's adjustment to his world. The commonly advised chart, in which dry nights are marked with a star, will be helpful in so far as it is accepted by the child as an expression of approbation and love from the parents. But in most cases a form of treatment going more deeply to the root of the matter will be required : again it must needs be highly individualized.

6. This account of the expressions of unconscious motives in children might be extended to much greater length ; but sufficient has been said to indicate their wide variety and the need of particular care in dealing with children's misbehaviour. The main points of treatment have been indicated in passing, but it may be well to sum up by emphasizing the importance of avoiding hasty generalizations, and the dangers of punishments, harshness, or any suggestion of malingering, since these can only tend to drive the matter still more deeply into the unconscious. Further, if we have reason to believe that the motive is *wholly* unconscious, we should avoid a direct attack, i.e. explaining to the child the suspected nature of the unconscious motive.

In every case of this kind the first stage of the treatment consists in gaining the child's confidence by genuine sympathy and understanding. Then by carefully directed discussion endeavour to help the child to realize, *from within*, the nature of the motive which is at work. When once it is brought into consciousness, its power for ill will be greatly reduced, if not removed entirely. Naturally the final step is sublimation—redirection into useful channels, as described at the close of the previous chapter.

Suggested topic for class discussion or debate.—In most children unconscious motives are so frequent that punishment (other than genuinely inevitable consequences) is never a safe measure of treatment.

Books which might be consulted :

As for the previous chapter, and
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E. K. Wickman, *Children's Behaviour and Teachers' Attitudes.* 1928.
Susan Isaacs, *The Behaviour of Young Children.* Vol. II : *Social Development in Young Children.* 1930.
C. W. Valentine, *The Psychology of Early Childhood.* 1942.
C. W. Kimmins, *Children's Dreams : An Unexplored Land.* 1937.
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CHAPTER XVI

THE MEASUREMENT OF INTELLIGENCE

Measure not with words the immeasurable.

1. While intelligence testing is not at present regarded as a normal part of a teacher's training, the time is probably not far distant when every school of any size will have on the staff at least one member skilled in administering tests of intelligence and in interpreting the results. In any case, this subject, bearing so directly on the education of children, is one of which all teachers should at least know the general purport, its aims and methods. The directness of its bearing on our work will probably be most forcibly realized when it is mentioned that these tests have also been called tests of *educable capacity*. There are of course other factors, such as physical well-being, which greatly influence the capacity of a child to profit by education ; and it has been more than once stressed in the foregoing chapters that we cannot with safety regard education simply as the development of the intellectual capacities, since that may leave entirely out of account the character and the will to serve the community. Nevertheless, there can be no question but that the decisive factor in determining how far a child is *capable* of profiting by education, even those aspects of it which are more particularly aimed at the formation of moral sentiments and ideals upon which the quality of the character depends, is his intelligence—his 'inborn general intellectual efficiency.' It is this precisely which the tests set out to measure.

2. Disregarding the attempts to assess mental qualities by the observation of physical peculiarities (e.g. facial features and the shape of the head), which, while possibly being in some way correlated with mental qualities, are far too uncertain for any reliance to be placed upon them, the first direct attempts to measure intelligence were those of Sir Francis Galton. He sought to do it by measuring the

capacity of individuals to discriminate fine differences on sensory stimuli, believing that this capacity depended on 'power of attention,' and that this was a criterion of intelligence. Clearly, however, the real worth of this (or any other) measure of intelligence could be finally determined only by evolving some means of comparing it accurately, over a large number of cases, with some other estimates of the intelligence of the individuals tested. Such an accurate comparison is called a 'co-efficient of correlation' (usually written 'r'), and it is to Professor Spearman that we owe the evolution of a formula for calculating this coefficient; to quote Dr. Burt, this application of mathematics 'transformed the mental test from a discredited dodge of the charlatan into a recognized instrument of scientific precision.'[1] The use of this formula gives us coefficients of correlation varying from + 1, through 0, to — 1. + 1 would mean that the two estimates coincided exactly, i.e. that if a thousand individuals were both tested and submitted to an independent estimate of intelligence, the final order of merit in both cases would be precisely the same. — 1 would mean that the two orders of merit were exactly reversed, and 0 would mean that there was an equal measure of agreement and disagreement; in fact, no correlation at all. This method of estimating the worth of any particular test has been applied to all subsequent attempts to measure intelligence and has been an indispensable factor in giving us the various tests upon which we are now able to place some reliance.

3. It was in the early years of the present century that tests, as now employed, were first evolved, and their development is associated with the name of the French investigator, Binet. He came forward with an idea which probably deserves to be considered as the most illuminating single contribution to the whole endeavour; namely the idea of computing intelligence in terms of *mental* age. In order that this might be done he gradually developed a whole series of graded tests, which as the result of prolonged

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[1] Note that it is the 'coefficient of correlation,' and through it the worth of any particular test, which is measured with scientific precision. No claim is made, as yet, to be able to measure intelligence with scientific precision.

experimentation[1] he assigned to successive years of chronological age, beginning with the third year, and in his final scale (1911) giving five tests to each year up to the adult age, omitting, however, the years eleven, thirteen, and fourteen. The mental age of a child was then determined as follows: supposing that he passed all the tests for the third and fourth years, four of those assigned to the fifth year, two only for the sixth year, and none for the seventh; he would then be credited with four years (i.e. the highest year for which he passed all the tests), and in addition ·2 year for each higher test passed. In short, the child's mental age would be $4+{\cdot}8+{\cdot}4= 5{\cdot}2$ years. Another essential feature of the Binet scale, which most subsequent investigators have adopted, was the use of as wide a variety as possible in the type of test, to minimize the effects of any special gifts or training in any direction.

This scale was taken up eagerly in America, England, Germany, and Italy, and has formed the basis of most of the subsequent work. Naturally the tests needed some revision when applied in other countries, for obviously the tests should be intimately related to the environment of the children and yet should assume only those general elements of the environment which might reasonably be supposed common to the entire community. Also, some of the tests, e.g. those involving the coinage, would vary in difficulty in different countries. One such revision, which was developed by Terman in America and is known as the Stanford Revision, deserves special mention because it introduced a new idea, namely the mental ratio or intelligence quotient, first suggested by the German investigator, Stern. This intelligence quotient (I.Q.) is arrived at by using the mental age as the numerator and the chronological age as the denominator of a fraction, which is then expressed as a percentage. Thus, a child of the chronological age of eight who tested out with a mental age of five would have an I.Q. of $\frac{5}{8}$ or $62\frac{1}{2}$. This in itself would not have been a very important addition, but subsequent careful investigations, notably those of Dr. Burt, embodied in his *Mental and Scholastic Tests* (1921), and Professor Terman in *The Measurement of Intelligence* (1916), give strong support to two very important claims, viz. (*a*) that the I.Q. remains *constant*, in the great majority of individuals ; and (*b*) that there is no increase in intelligence after about the sixteenth year.

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[1] Each test was tried out on a large number of children of varying ages and assigned to that year in which 50 per cent of the children of that age passed.

Both Raymont (in *Education*) and Thomson (in *Instinct, Intelligence, and Character*) hesitate to accept this second conclusion, in the absence of more definite evidence. In most discussions of this point there seems some confusion between innate intelligence and developed intellect or intellectual power. The former is presumably the hereditary datum, which for any given individual remains relatively constant throughout life in terms of the first conclusion above. The latter is (still following Dr. H. S. Jennings) a resultant of the interaction between this innate intelligence and experience ; it develops in the individual through the successful tackling of life's problems, or it might be safer to say, simply, that there is causal relationship between this development of intellect and the successful tackling of problems. Given an equal degree of innate intelligence in two individuals, that one will develop the greater intellectual power who is placed in the more stimulating environment, i.e. amidst problems which are *just within his capacity to solve* (as determined by innate intelligence). A demonstration of this on a grand scale has been the superior intellectual power developed by considerable numbers of pure African negroes in America as contrasted with the paucity of such development of intellect amongst far greater numbers of their racial equivalents who have remained in the less stimulating environment of Central Africa.

On the other hand, the hereditary factor, intelligence, develops in the race, over untold ages, through the play of natural selection in securing the survival of those individuals in whom the better endowment of intelligence makes possible the greater development of intellectual power. For, of course, no matter how stimulating the environment (in the sense suggested above) the development of intellectual power is definitely limited by the original datum of intelligence in any given individual. Again, the tests measure directly the intellectual power, and only indirectly, and by implication, the innate intelligence. Hence the experimental evidence of Terman, Burt, and others, which gives support to the second conclusion above (that there is 'no development of intelligence after the age of sixteen years'), should probably be interpreted to mean that (in accordance with normal distribution) the great majority of those tested have an endowment of intelligence approximating to the average; and that that average endowment of intelligence is such that, under present conditions of environmental stimulus, the limit of intellectual power is attained at about the age of sixteen years. This would not exclude the possibility of the continued development of intellectual power well after the sixteenth year in the case of those individuals with a richer endowment of innate intelligence. Nor does it preclude the possibility of a moderate increase in the general level of intellect as the result of a more stimulating environment, especially in the sphere of education.

In any case, if, even with this modification, the two claims noted above are finally established, it will mean that we shall be able to predict at an early age the ultimate degree of intellectual attainment of any individual. For example, in the case supposed above, the child with I.Q. 62½ at the age of eight would have (the I.Q. remaining constant) at maturity, say, sixteen years, a mental age of ten. Such a power to predict would then enable us to determine in good time those members of the community who by reason of mental deficiency are in need of state protection both against exploitation by others and against themselves, and thus to obviate a great deal of preventable misery, to save a great wastage of public money, and perhaps to prevent the perpetuation of such mental deficiency.

4. But although, in this and in other ways to be noted presently, the mental tests have already proved of great

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[1] Cf. Dr. Stephen S. Colvin in *Twenty-first Year Book*, National Society for the Study of Education, 1920, part i, ch. iii, p. 18.

value, it must not be imagined that any degree of finality has yet been reached. Dr. Burt has shown that despite the best endeavours to eliminate them, both social status and scholastic attainments, especially the latter, exercise a very marked influence on success in the tests—in other words, to an unpleasantly high degree, they still measure, not intellect nor innate intelligence, but acquired information. Further, it has been found exceedingly difficult to arrange the age assignments, and sequence of tests, so that they may form even an approach to the ideal of a steady ascent by *equal* steps, and the coefficient of correlation obtained by comparison with the estimates of intelligence made by school teachers is still not very satisfactory. This means that to remedy these defects, much patient endeavour is still required in sifting out the tests, and evolving new ones.

By way of illustration of what is being done in this direction, one or two examples may be given of the 'reasoning tests' which were included by Dr. Burt in his revision of the Binet scale and which he found to give higher correlation coefficients with teachers' estimates. Each test is printed on a card and given to the child to ponder over, while any verbal difficulties are explained.

For year 7 :

Kate is cleverer than May ;
May is cleverer than Jane.
Who is cleverest, Jane, Kate, or May ?

It will be appreciated that any alteration of the *arrangement* of the data, especially of the order of the last three words, would at once alter the difficulty ; hence standardization of the form of the tests is essential.

For year 12 :

Field-mice devour the honey stored by humble-bees ; the honey which they store is the chief food of the humble-bees. Near towns there are far more cats than in the open country. Cats kill all kinds of mice. Where, then, do you think there are most humble-bees, in the neighbourhood of towns or in the open country ?

5. A criticism often levelled at all tests of this kind is that they are too linguistic in character; this, it is said, gives an undue advantage to what are called 'verbalists'—individuals who are markedly glib of tongue and quick to spot the drift of linguistic material. Against this criticism it must be mentioned, however, that Dr. Burt, in comparing the validity of individual tests, found that those of a specially linguistic type were amongst the ones which correlated *most closely* with independent estimates of intelligence. This result, therefore, would seem to support the contention which has been advanced on other grounds,[1] that the use of language is one of the most fundamental and essential factors in the development of intelligence. This would mean that the neglect to develop and exercise the function of language in a child is to some extent to stultify whatever innate intelligence he may possess. In that case, the criticism that the tests are too linguistic need not be regarded very seriously.

Nevertheless, in view of this criticism, several investigators have developed forms of test which are almost entirely free from the linguistic aspect, called, generally, the performance tests. A great variety of these have now been developed and tested out. The results of one of the more recent investigations published by the Industrial Fatigue Research Board (H.M.S.O., Report 33, 1926) show a correlation of approximately ·45 between the Binet Tests and the Performance Tests, but the former correlate more highly with the scores in Scholastic Attainment Tests. The following examples are taken from the above-mentioned report.

Maze Test (*Porteus*)

This test consists of a series of nine straight-line mazes, printed on separate sheets and graded progressively in difficulty for children between the ages of five and fourteen.

Procedure. The child is given a pencil and the maze for Year V is put in front of him. The examiner says: 'Suppose this is the plan of the paths in a garden. These lines are walls which you cannot get over. Start with the pencil from the mark at the top and draw a line to show how you would find your way out of the garden by the quickest path. Show me first of all any openings you can see (two openings are indicated). All the other paths are blocked. Don't go up any of the blocked turnings. Go down this path from the top and then out by the first opening you can find. You must not trace the path in the air first of all.'

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[1] See Dewey, *How We Think* (1910), p. 170.

With the succeeding mazes the openings are not pointed out first of all. Emphasize that the child must find his way out without turning up any of the blocked paths ; as soon as he enters a blind alley and has discovered that he is blocked, do not allow him to correct his mistake by retracing his path, but give him a fresh sheet of the same maze, for a second trial. If for some reason a third attempt seems needed, invert the diagram and treat it as a new test.

Picture Completion (*Healy*)

Material. For this test the materials consist of a set of eleven pictures, mounted on two pieces of wood measuring 11 by 11·5 inches, and a set of sixty small pictures, also mounted on wood. The pictures which make up the set of eleven represent as many different scenes in a schoolboy's day. In each scene a square hole has been cut out (removing some essential object) which has to be filled with a suitable piece selected from the set of sixty small pictures.

Procedure. The examiner places the set of pictures in front of the subject and the box of small pieces at the side where they can be seen and reached easily. Before the subject begins the test, the examiner must make sure that the small pieces are in their proper order in the box, i.e. in the order determined by the number printed on the back of the pieces. He must also be sure that the eleven scenes are set out in proper order and that the demonstration scene comes at the subject's left. The examiner then says : 'Here is a story told in pictures. The story begins here (pointing to demonstration scene) where the boy is getting dressed. It shows the same boy—remember, the same boy—doing one thing after another during the same day (examiner points along the first row, then along the second to indicate the sequence clearly). You see in each picture a piece is missing. Here (pointing) are a lot of small pieces. They fit in any of the spaces, but there are more pieces than you can use. You are to pick out the piece that you think is needed, that is best to complete the scene of the picture. For instance, what is missing here? (Point to demonstration scene.) Yes, a boot. (If incorrect answer is given the examiner says: 'No, he is dressing, and he is stooping for his other boot.')

'Now which is the boot that he must have? Yes. This (pointing to the shoe) wouldn't be right, because he must have a boot to match the other one. That is the way each picture is to be done. There is always some piece that is the best one. You can tell which it is by studying the picture. Now go ahead.'

The examiner gives no more help, and says nothing further, except, if the subject asks, to tell him he may change his moves. When all the spaces are filled, the subject is asked if he is quite satisfied. If not, he is told he may make changes.

The time-limit is twenty minutes.

Cube Construction Test

Material. The materials for this test are three wooden blocks called Models 1, 2, and 3 respectively, and the twenty-six one-inch cubes which are necessary to construct these three models; a stop-watch is also required. Models 1 and 2 measure 1 by 3 by 3 inches and are made to represent a solid composed of nine small cubes. Model 3 is a two-inch cube so marked as to represent a composite of eight small cubes.

Procedure. The examiner presents Model 1 and says: 'You see this block? Notice that it is painted on the sides, but not on the top or the bottom; and you see these small cubes, partly painted and partly unpainted. These nine cubes can be put together so as to make one block just like this.'

The examiner puts the cubes together, pointing out and commenting on the painted surface of each cube as he fits it in position. He then points to the block which he has assembled and says : 'You see that I have put these cubes together to be just like this big block (pointing to Model 1). This one I have made (examiner picks up the nine cubes which he has assembled and holds them together in his hand as one block while he points to the four sides, top and bottom as he mentions them) is painted on all four sides but not on the top and not on the bottom. You see, it is just like this one (pointing to Model 1).'

The examiner then presents the same model and cubes in irregular order and says : 'Now you are to fit the cubes together so as to make a block just like this. Do it as quickly as you can and tell me when you have finished.'

The examiner times the performance and counts the number of moves.

Model 2 is painted on the edges and on the top but not on the bottom ; and Model 3 is not painted at all.

These are presented in a similar manner to the above, the set of appropriate one-inch cubes being supplied with each.

The Merrill-Palmer test is also of this performance type, but is specially adapted for children from eighteen months to six years of age. It is therefore of particular value during the period from eighteen months to three years, for which there is no Binet test, and is also very useful in the case of backward children up to six years on account of the minimal linguistic element involved.

6. A practical difficulty inherent in all these tests, and those of the Binet type, is that they can be administered to only one child at a time, and that the adequate testing of each individual may take as long as an hour, and in difficult cases, a good deal longer. Further, they require, in the person who administers them, one specially gifted by disposition to win the confidence of the child ; to detect any slackening of effort and to give the necessary encourage-

ment; and with ability and insight to observe and interpret the child's attitudes and responses. Consequently, although they are certainly the best instrument, so far devised, for taking an accurate measure of intelligence, these difficulties of administration prevent their being used on a large scale; and there have been developed the 'group tests' as a means of making a more rapid survey—though, of course, far less accurate.

These group tests were developed in America during the 1914–18 war, as a means of quick discrimination, amongst thousands of recruits day by day, of those who would probably be suitable to hold non-commissioned and commissioned rank. They proved so serviceable that they have since been adopted and developed in most countries, though it has not been possible to devise suitable group tests for children under ten years of age, partly because of the inevitable time-limit and partly because of the impossibility of humouring the personal peculiarities and nervousness. One or two examples of group tests are included by way of illustration—from Ballard's *Crichton Test* for the more intelligent adolescents and adults.

'Several little wooden cubes each with an edge of one inch are put together to form a solid cube with an edge of three inches. This big cube is then painted all over the outside. When the paint is dry, the big cube is broken up into the original little cubes. Now answer these four questions about the little cubes:

How many will have paint on four sides?
How many will have paint on three sides?
How many will have paint on two sides?
How many will have no paint on?

'If I toss up two pennies together several times they may come down in three different ways, i.e. head and head; head and tail; or tail and tail.

In how many ways may four pennies come down?
In how many ways may 100 pennies come down?'

7. It remains to consider in what specific ways these tests may be of service in education. If they could do no more

than help us to discern, in good time, as already mentioned, those in need of special care, they would, even by that alone, have justified the time and effort spent upon them. But in fact they have much more to offer.

Statistics show that the cost per child, to the state, in the secondary school is about double the corresponding figure for the elementary school ; yet it is a well-known fact that there are many pupils attending the secondary schools whose capacity to profit by the instruction given there is practically nil. They are, of course, profiting by their participation in the corporate life of the school, but this advantage would be greatly enhanced if they were at an institution where the curriculum was more suited to their capacities. As it is, their presence at the secondary school not only represents a great waste of public money, but also is damaging to the teaching capacity of the staff, for no one can struggle at a hopeless task year after year without losing his enthusiasm and zeal.

By far the most serious wastage, however, results from the fact that so long as entrance to the secondary school depends either on the affluence of the family or on the ordinary entrance examination many are excluded who would profit, and become more effective citizens, by the instruction given. Thus, for example, it was found some years ago that in the free-place examinations for entry to the secondary schools in Northumberland County very few of the prizes ever went to the children from the remoter country districts ; it was suspected that this was not due to a lack of capacity in the country lads, and accordingly Professor Godfrey Thomson was commissioned to conduct, as an experiment, a group test of intelligence *in conjunction with* the ordinary examination. The result was that several country children, who did well in this intelligence test, were given their chance at the secondary school, and so handsomely justified their selection that the experiment has now become part of the regular practice, both there and elsewhere.

In Natal it has been the practice for some years past to *reserve* twenty bursaries for country schools ; but even this measure was not sufficient to meet the difficulty under consideration, as will be seen by the following figures :

Year	*Number of Reserved Bursaries awarded*	*Number awarded to schools with fifty pupils or less*
1924	7	1
1925	3	1
1926	13	3
1927	11	1
1928	15	2
1929	19	4
1930	15	3

It will be seen that the country schools never earned the whole twenty bursaries available and that the small schools (of which, of course, there are a large number) did very poorly. The result has been that the Natal Education Department has also included, as part of the Bursary Examination, a group test of intelligence.[1] This was instituted in 1931 and although, owing to alterations in the regulations, it is difficult to compare the 1931 figures with those given above, it is surely not without significance that in this year no less than fifteen bursaries went to really small schools. In 1932, thirteen bursaries went to this type of school, and in 1933, seventeen.

Again, the tests have been applied with success within the school itself, to the problem of classification of the children. It has been suggested that, instead of the traditional method of grouping the children more or less according to their chronological age, we should employ a grouping by mental age, in order to secure more equality of capacity, within the group, to tackle the appointed syllabus. There is no doubt that such an arrangement would facilitate the progress of the group by giving greater homogeneity, but obviously there would still be some disparity because the children of one mental age would not all have the same I.Q. Consequently, although all might be equally capable of tackling the syllabus, some would certainly be able to cover the ground more quickly than others. Thus it would probably be necessary to recognize at least three divisions of the group, according to the I.Q.; e.g. those below 90, those between 90 and 110, and those above 110. The last-named group would be expected to cover the ground more rapidly and also to deal with the matter more fully; the first group, on the contrary, would go more slowly and deal only with essentials. Clearly, in large schools, where the numbers demand the division of each standard into groups, this arrangement would fit in admirably, even with the present rigid system of *class* teaching. In fact, in some such schools, there is already in vogue the practice of dividing the standards, or forms, into A, B, and C groups, roughly on a basis of intelligence; in such cases there is no reason why intelligence tests should not be employed to make the grouping more accurate.

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[1] For various reasons this inclusion of the intelligence test has now been abandoned.

But, as a matter of fact, there is a distinct tendency at the present time away from the practice of continuous class teaching and in favour of individual work; such a tendency is inevitable in small schools, while the Dalton Plan carries it into larger schools with thoroughness and organization, and there are many modified forms of this plan in which the tendency is partially expressed. This move in the direction of treating the children individually makes the application of the intelligence tests far more practicable. In the first place, the overt division of a class into groups on an I.Q. basis (or even on a rough intelligence basis without the use of tests) makes for invidious distinctions, which may be definitely harmful to members of the top and bottom groups, by tipping in one direction or the other that balance between positive and negative self-feeling in the self-sentiment, that ready recognition of one's own *powers and limitations*, which constitutes self-respect. Few would deny that many children, placed in 'C' standard or form, have had their self-respect, their morale, damaged thereby.[1] On the other hand when individual work prevails, each child's I.Q. (which, of course, would not be published, nor even made known to the child himself except under special circumstances) would serve to enable the staff to adjust the demands made upon him (to modify his 'assignments'), with some accuracy, to his individual capacity in each particular subject. This would not only ensure his progress at the best rate of which he is capable, thus obviating what is now regarded as the most serious form of retardation—that of the brighter children; but it would also go far to enable us to give each child work *just* within his capacity, which, as we saw in discussing the formation of the self-sentiment,[1] is one of the primary means of securing that desirable balance upon which so much depends.

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[1] In *Education and the Social Order* (1932) Bertrand Russell makes a strong plea for the segregation of the more intelligent pupils, both to secure their own rapid advance, and to save them from being misunderstood and ridiculed by the more virile, but duller, pupils.

All this, of course, implies a great refinement of skill and knowledge on the part of teachers in the handling of their charges. But naturally, teachers, in common with members of all other professions, would desire to advance with the times in making use of the developments of science for the improvement of their methods and the furtherance of their work.

Suggested topic for class discussion or debate.—Class grouping in terms of mental age is seriously damaging to the personality of both the superior and the inferior types.

Books which might be consulted:

Cyril Burt, *Mental and Scholastic Tests.* 1921; 3rd imp. 1927.
L. M. Terman, *The Measurement of Intelligence.* 1919.
Tests of Educable Capacity. Report of Consultative Committee. H.M.S.O.
R. Stutsman, *Mental Measurement of the Pre-school Child.* 1931.
V. H. Hazlitt, *Ability.* 1926.
D. Kennedy Fraser, *The Psychology of Education.* 1923.
T. Raymont, *Education.* 1935.
H. R. Hamley, *The Testing of Intelligence.* 1935.
Susan Isaacs, *The Psychological Aspects of Child Development.* 1935.
G. A. Ferguson, *The Reliability of Mental Tests.* 1942.
P. E. Vernon, *The Measurement of Abilities.* 1940.
C. Burt, *The Backward Child.* 1937.

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[1] p. 69.

CHAPTER XVII

CONCLUSION

' In Loco Parentis '

We may close as we began with a general survey of our field, but from a different angle. In one sense the later chapters dealing more particularly with the techniques of teaching have led us away from essential realities ; for while, no doubt, we teachers are the salt of the earth, it is well that we should remind ourselves sometimes that the work we have undertaken is fundamentally the function of others. It is merely the division of labour entailed in the evolution of the civilized state, which has resulted in the parents' handing over to us the more formal aspects of the education of their children, and, willy-nilly, they cannot depute to us more than a bare moiety of education as a whole.

It is well that we should keep this in mind because in the first place it means that the maximum influence and efficiency of our endeavours cannot be attained unless there is a large measure of understanding and co-operation between ourselves and the parents of our pupils. No matter how clear our own vision of the goal, and no matter how fully we may have mastered the techniques of instruction and of fostering the growth of character, a brief consideration of any one of the foregoing chapters will make it perfectly apparent that unless parents and teachers have common objectives and agree as to the general prin ciples of method in educing desirable behaviour, they mu be frequently pulling against one another to their mutu exasperation and to the serious detriment of the childre But in spite of the potency of these facts, they are as ye very far from being generally realized, and it behoves teachers, as the more organized body, to take the initiative in remedying this defect, by seeking more frequent and more searching contacts with parents.

In the second place the fact that in the last analysis ours is a deputed office should impress upon us that, for guidance in the all-important question of the personal relationship between ourselves and the children, we should look to the ideal parent-child attitudes. Since we stand *in loco parentis* we cannot hope to fulfil our obligations completely unless we study to preserve those attitudes at their best, notwithstanding the obvious difficulties arising from the larger numbers of children we are called upon to deal with ; and notwithstanding the fact that actual parent-child attitudes are not always ideal.

In this connection it is not without significance that the phrase 'the problem of parent-child relationships' is frequently used to-day without causing the least flicker of emotion in the reader, whereas fifty years ago it would certainly have produced a raising of eyebrows ; our grandfathers, and even our fathers, were so sure they knew how to 'bring up children.' To-day the pendulum has swung, if anything, too far in the opposite direction ; what with 'the new psychology and all that,' the majority of parents who take their responsibilities seriously are feeling rather bewildered by the complexity and delicacy of the task which nature and the structure of society have contrived to thrust upon them.

Of this complexity and delicacy there is no doubt whatever, and any attempt to minimize it or to play the traditional ostrich in face of it would plainly be a disservice to the cause of education. And while the foregoing pages were written primarily for the consideration of teachers and those in training for the teaching profession, it is felt hat whatever value they may have must be equally relevant this problem of parent-child relationships. One may ke confidence and courage from the fact that, as more d more light is shed by the study of psychology on the ain phases of the development of personality and character, and on the commoner deviations, the essential guiding principles for those directing this development begin to emerge with greater definiteness and are found to be not wholly unfamiliar or revolutionary. It becomes increasingly clear that children are not easily bluffed and that real frankness and honesty of purpose are essential if we would hold their confidence; that emotionally they are more sensitive than adults and consequently there is need of more rather than less tact in dealing with them as compared with our grown-up friends; that their most urgent needs, after air and food, are affection, attention, and a sense of security. In brief, here as in most other problems involving human relationships, 'love is the fulfilling of the law.'

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